

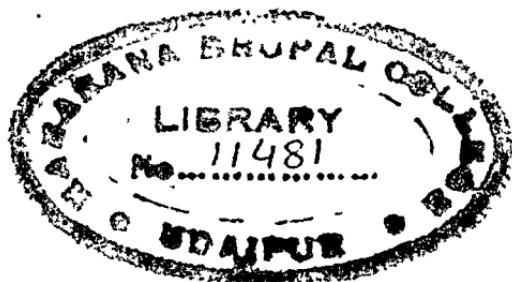
ECONOMICS OF
INDUSTRIAL
ORGANIZATION

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By

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PREFACE

INTRODUCTORY textbooks of Economics are often deficient in their handling of problems of industrial organization. There are obvious reasons for this. The main concern of such books is with the fundamentals of economic theory and in particular with the theory of value. If these matters are to be adequately dealt with and the books are not to become unwieldy, the organization of production must be very briefly dismissed. This book is mainly designed as a supplementary text to fill out the general Economics textbook treatment of industrial organization. It attempts to set out the minimum background of theory and facts with which students should be familiar as a prelude to more advanced study and is intended primarily for students taking a first year University course in Economics or other professional courses of equivalent standard. It may also be of some use, as an introduction, to more advanced students who frequently find specialization in this field difficult owing to lack of adequate background. An effort has been made to give the book a sufficiently practical bias to make it attractive to that vast army of students who take courses in economic subjects with the intention of achieving a better understanding of the world of affairs rather than of becoming expert economists. From this point of view it is hoped that it may meet the needs of engineers and others embarking on commercial or industrial administration courses or preparing for the examinations of the professional management societies.

As is usually the case, the greatest difficulty has been to decide what to include and what to omit. To make the book too long would be to defeat its purpose and so it was decided to omit those topics bearing mainly on the internal organization and management of the firm which are generally discussed under the heading of industrial administration, e.g. costing, labour management, wage systems, scientific management, and so on. Also, for the most part, the discussion has been confined to problems of manufacturing and extractive industry and not extended to cover agriculture, retail and wholesale trade, etc.

At various points the argument has been linked up with

elementary value theory. This has involved some slight repetition which it is hoped the reader will find helpful rather than tedious. It has been found convenient to assemble most of the descriptive material in a final chapter, but some factual illustrations have necessarily been interspersed throughout the earlier chapters. A little overlapping has resulted, but this, on the whole, seemed preferable to any alternative arrangement. A warning should be sounded here. Important changes in the organization of several industries are probable whilst this book is in the press. So far as possible the reader has been warned where such changes appear to be imminent.

In putting forward this modest addition to the list of current textbooks, the author is not without hope that it will do something to stimulate the interest of students in an aspect of economic studies which so far has been comparatively neglected in this country.

A. BEACHAM

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CHAPTER I

The Industry and the Firm

I. SOME PRELIMINARY NOTIONS

IN Economic Theory we generally think of the "firm" as being the primary unit within which productive resources are organized for the purpose of producing wealth. That is to say, it is the unit within which the combination and the deployment of the factors of production are governed by a single, or at least a unified, will. This "will" is embodied in the person of the entrepreneur, who is regarded as contributing the factor of organization to the firm. He decides the proportions in which the various factors of production are to be employed, the volume of output, the price or prices at which the output is sold, and so on. The "industry" in theory is conceived of as an aggregate of firms producing identical products. The products of the various firms are to be considered identical not only in respect of their physical make-up, but also in respect of the attitude of consumers towards them. There must be no preference on the part of any consumers for the product of one firm such as would justify them in paying a fractionally higher price than that at which the goods of the other firms are being offered. Since any such imperfection of the market is ruled out, it follows that the theoretical concept of the industry can properly be applied only where a state of perfect competition prevails.

Within the limits of these definitions it is impossible in real life to identify with certainty either the firm, the entrepreneur, or the industry. It is important, therefore, that we should discuss each of them more fully. In everyday speech the word "firm" is generally used to describe any aggregate of productive resources organized for the production of wealth under a single name. But if singleness of purpose is to be our main criterion for deciding what is and what is not a firm, it is clear that it frequently embraces a much wider sphere of operations. A number of firms, each carrying on business under separate names and regarded in law as distinct entities

may in fact be subject to unified control. The same person trading under different names may own two or more businesses. In the case of joint-stock companies one company may own more than 50 per cent of the voting share capital of another, which will enable the former to control the latter in exactly the same way as if both companies constituted a single undertaking. The position is still further complicated by the fact that a number of firms may be subject to unified control in some aspects of their business policy and not in others—as when a number of firms are parties to a cartel agreement by which the separate outputs they produce and the prices at which they sell these outputs are controlled by some authority external to the individual firm. Such an agreement might, nevertheless, leave each individual firm free to determine the technical and organizational methods by which these outputs are produced.

The term "entrepreneur" is not much used in ordinary speech. But the person who has the final voice in management, whether we call him the entrepreneur or just "the boss," is also extremely difficult to identify in practice. In the case of the small one-man business—the local doctor, blacksmith, or grocer—no difficulty arises. But in the more important case of the joint-stock company, he may be the Chairman of the Directors, the Managing Director, or he may be neither. In theory, final authority rests with the shareholders who have power to appoint the directors.¹ In practice, however, business leadership is rarely vested in or sensibly affected by the general body of shareholders. But in most cases it will be found, on examination of the facts, that there is a chief executive officer (whatever he may be called) who may or may not be a large shareholder in the concern, who is responsible for the day-to-day conduct of the firm and normally decides those broad issues of policy which properly appertain to the entrepreneur. It is true, particularly in the U.S.A., that in very large firms there is often much decentralization of management so that there appear to be a large

¹ In economic theory, the entrepreneur is often regarded as the risk taker as well as decision maker. In the case of joint-stock companies these functions tend to be assumed separately by ordinary shareholders and management respectively. For this reason, it is convenient in the present context to identify entrepreneurship with decision making rather than risk taking.

number of entrepreneurs in the same firm. But even where there is a large number of responsible higher executive officers, there is nearly always some person or small body of persons whose function it is to co-ordinate important business decisions and to exercise final authority. We may therefore use the term "entrepreneur" in discussing the policy of the firm in the fairly confident knowledge that the final power to take decisions resides somewhere—probably in one person or at the most in a small informal committee. But in using the term we should always be aware of the practical difficulties of identifying the entrepreneur, that the entrepreneurial function attaches to no particular officer, that this function may in fact be exercised by a co-ordinating committee of persons which may be chiefly composed of professional managers having a negligible ownership interest in the business, and that the so-called entrepreneur may be subject to occasional control by a single active director, a small group of directors, or an influential body of shareholders.

As for the concept of "industry" it is clear that we rarely, if ever, find in real life a group of firms producing identical products either in the sense of physically identical products or in the wider sense of the term "identical." In any case, it is quite usual for the single firm to produce a wide variety of products. Yet we cannot easily discard the use of the word "industry" in our study of industrial organization. We may agree that no two firms produce identical products but it is nevertheless true that we can frequently identify a group of firms producing goods which compete much more keenly with each other for consumers' patronage than they do with any goods produced by firms outside the group. In the last analysis, of course, all goods compete with each other, for the patronage of the consumer, so that we may find difficulty in drawing precisely the boundaries of our "groups of firms." But for most purposes the term "coal industry" or "iron and steel industry" gives rise to little misconception. The coal industry is composed of all firms mainly engaged in producing coal. Some firms produce ganister, fire-clay, etc., with the coal, but they are not important. The coal produced will vary in quality and chemical composition, but we can readily agree as to what is, and what is not, coal. The different types will

compete more or less with each other in use. Coal, in its turn, will compete with fuel oil. But there is obviously a considerable difference in the intensity with which different types of coal compete with other and the intensity with which coal competes with fuel oil. Coal of one quality is a much closer substitute for coal of another quality than coal is for fuel oil. In the same way we may fairly accurately define the iron and steel industry as composed of all firms mainly engaged in the production of iron and steel. Here the unifying characteristic is the use of a common raw material and the only difficulty that arises is to decide how far forward towards the manufacture of finished steel products we wish to throw our definition.

From all this it follows that if we are to use these terms in the following pages we shall have to do so in a much looser sense than they are used in economic theory. The word "firm" will be used indiscriminately to mean either a business organization working under a single name and having a separate legal existence or a group of "firms" subject to completely unified control. In contexts where the distinction is significant, the term "undertaking" or "unit" will be used to describe the latter. The term "entrepreneur" will be used in the normally accepted sense of the person who is in effective control of the policy of the firm in its ordinary business, but with a full awareness of the practical limitations of the concept. "Industry" will be used in its everyday sense of a group of firms producing broadly analogous products, or working on a common raw material.

2. FORMS OF ENTERPRISE

It will be convenient at this stage to say something further about the different types of firm. The simplest unit of business organization is the one-man business. This is particularly common in agriculture, retail trade, and the professions, but many one-man businesses are still to be found in manufacturing and extractive industries. The firm is generally small and works mainly on capital supplied by the owner-manager.

The partnership is frequently a consequence of the growth of a one-man business, when one or more other persons put additional capital into it and receive in return a proportion of the profits. The great disadvantage of this form of the firm,

from the point of view of the partners taken into it, is that they become fully liable for its losses up to the limit of their resources. The fact that a number of people share in the net profits of the business is usually taken as evidence that a partnership exists and that the persons so sharing are partners with unlimited liability. Such liability may only be escaped if the persons contributing the additional capital and sharing in profits take no active part in the business, and have it clearly stated in the agreement with the owner of the business when the loan is made that no suggestion of partnership rights exists.

By the Limited Partnerships Act of 1907, a business may constitute itself as a limited partnership by registering the fact with the Registrar of Companies and giving details of the nature of the business, the names of the partners and the sums contributed by each limited partner. The limited partners in such a business are then liable for the firm's debts only to the extent of the amount of capital which they contribute individually. The limited partnership has not, however, become a popular form of business enterprise in this country.

The most common type of firm is the registered joint-stock company. This description covers all companies registered under, and subject to, the provisions of the Companies Acts. Such companies may be of various kinds. They may be unlimited companies in which the liability of each member for the debts of the firm is unlimited or they may be companies limited by guarantee in which each member is liable (in addition to his share capital, if any) for an amount which he undertakes to contribute to the assets of the firm in the event of its being wound up. Unlimited companies and companies limited by guarantee may or may not have a share capital.

Either of these forms of the registered company is comparatively rare. The most common form is the company limited by shares in which the liability of members is limited to the amount unpaid on any shares held by them. The limited company may either be public or private. The private company may have as few as two members, whereas the public company must have at least seven. The private company is subject to certain restrictions in that the right to transfer its shares is restricted, the number of its members (exclusive of

employees) is limited to fifty, and the company is unable to invite the public to subscribe to its shares.¹

The advantages of the private company under certain circumstances are obvious. The small one-man business may turn itself into a private company and get the advantages of limited liability by simply taking in one shareholder (in addition to the proprietor) who may hold only one share. Also, when a small business wishes to expand and requires additional capital, the private company form is often preferred to the limited partnership. The former proprietor of the business may easily retain complete control, the business retaining all its former flexibility and freedom from unwelcome publicity. But when and if the business expands considerably in size the advantages of the public company become more apparent. Additional capital is more easily forthcoming when an application to the public for subscriptions to its shares may be made and when those shares may be freely bought and sold. Comparatively few people wish to purchase shares which cannot be easily and quickly disposed of if occasion warrants. For this reason most large firms become public companies at a certain stage in their growth, although they may originally have been one-man firms or private companies.

There can be little doubt that the registered company is the chief form of business enterprise in this country. In 1938 the total paid up capital of all registered companies in the United Kingdom, having a share capital, exceeded £6000 millions. The number of private companies was ten times as great as the number of public companies,² but, by reason of their smaller average size, they controlled less than half the paid up capital controlled by the public companies. Unlimited companies and companies limited by guarantee are of negligible importance by comparison with limited companies. In 1938, for example, over 13,000 new limited companies were registered, whereas less than 200 companies unlimited or limited by guarantee were registered. It should, of course, be realized that numbers of companies or amounts of paid up capital controlled by companies do not give a very accurate impression

¹ All private companies were formerly exempt from any obligation to hold a statutory meeting of shareholders and to publish a balance sheet. The Companies Act of 1947 (see page 15) restricts and qualifies these privileges.

² In December, 1946, there were approximately 180,000 private companies and 17,000 public companies on the register.

of the proportionate importance of corporate enterprise in the economy or the relative real importance of various forms of corporate enterprise. More accurate estimates of the proportional importance of corporate enterprise are available for the United States where conditions are broadly similar to those of this country. Mr. Gordon¹ has estimated that although corporations comprise only 20-25 per cent of the total number of firms, they do 60-65 per cent of the total amount of business done annually in the U.S.A. Since this estimate includes firms engaged in service occupations and agriculture, the figures would be much higher if calculated only in respect of manufacturing and extractive industries.

The importance of the joint-stock company (particularly in its public limited form) to the growth of large-scale organization in modern industrialized communities can hardly be exaggerated. It greatly facilitates the bringing together of the necessary large aggregates of capital by drawing on the innumerable sources of small savings distributed throughout the community. Persons of modest means can acquire shares in, and the right to participate in the profits of, the largest company, and in most cases such shares are easily realizable through the machinery of the Stock Exchange.² The latter not only makes possible the avoidance of permanent commitments but, by organized trading in securities, reduces the risk of loss. The joint-stock company has the advantage of perpetual life and can afford to take a longer view than the one-man business. Also it is less dependent than the latter on a continued supply of "family brains" since it can buy the services of able executives who may be unable to set up in business on their own account through lack of capital.

The joint-stock company is not without its disadvantages. It facilitates growth, not only by its power of attracting capital, but also by the ease with which numbers of firms may be brought under common control. It may grow beyond its economic limit, growth being stimulated by pursuit of economic power rather than a desire for profits. A stage

¹ R. A. Gordon *Business Leadership in the Large Corporation* (Brookings Institution, 1945), page 13.

² Also, as will become apparent later, the financial structure of joint-stock companies is extremely flexible, and offers the public opportunities of investment on variable terms, and at varying degrees of risk.

may be reached where the undertaking is beyond the effective control of the entrepreneur and where enterprise is stifled by bureaucratic procedures and red tape. Ownership of the share capital may be so widely dispersed that the shareholders are unable to exercise effective control over the management. Management may become irresponsible and the interests of the shareholders may suffer. We shall have more to say on this subject at a later stage.

The method of floating a limited company may be briefly indicated. The new company files its Memorandum and Articles of Association, together with a statement of its nominal capital and particulars of its directors, with the Registrar of Companies. The Memorandum gives details of the name of the company, the situation of its registered offices, the objects of the company, the liability of its members, and the amount and nature of its share capital. The Articles regulate the internal affairs of the company, e.g. meetings and voting powers of the shareholders, the appointment and the powers of directors, etc.

The public company must also file a list of persons consenting to act as directors, the written consent of directors to act, and their agreement to take and pay for the shares which qualify them to act. After examination of these documents, the registrar will issue a Certificate of Incorporation, and the new company acquires a legal existence. The private company can then start business operations, but the public company is precluded from doing so until it has made a declaration that each director has taken up and paid for his qualifying shares. Also, before it can exercise its borrowing powers and appeal for public subscriptions to its shares, it must file its Prospectus or a statement in lieu thereof. The Prospectus, which is issued with any approach to the public for subscriptions to shares, contains all relevant information relating to the company, including its assets, or the assets which it proposes to acquire, past earnings, future prospects, etc.

3. CAPITAL STRUCTURE OF COMPANIES

The total nominal value of the shares which a company is authorized by its Memorandum to issue is known as its authorized capital, and the nominal value of the shares actually issued as its issued capital. Shares need not be fully paid up at

once. For example the purchaser of a £1 ordinary share may be asked to pay 2s. 6d. on application for each share, 5s. on the allotment of the share to the purchaser and 2s. 6d. three months later. The other 10s. may be left as a reserve of uncalled capital to be paid up at some specified future date when it is needed by the company. Occasionally, a certain proportion of the uncalled capital, known as reserve capital, can only be called up in the event of the company being wound up. Shares may be issued at a premium (i.e. a price above their nominal value) or at a discount.

It should be noted that the authorized capital gives little idea of the magnitude of a company's operations or of the real value of its capital assets. Neither does the issued capital since a large part of it may not have been called up. Nor do we get a much more accurate idea of the size of the company from the total value of its paid up capital, since it may have been financing capital development out of past profits or acquiring stocks of raw materials with the proceeds of bank loans. It follows that the dividend declared on an ordinary share may give a very false impression of the profitability of the investment to the holder, and of the profitability and efficiency of the company. The holder of the share may have purchased the share at a price far in excess of its nominal value, either because it was issued at a premium, or because it was purchased from a former holder subsequent to its issue by the company. A dividend of 10 per cent on a £1 ordinary share represents a return of only 5 per cent if the holder had to pay £2 for it. It represents a much higher return if the holder obtained it on issue for 5s. (15s. unpaid), though in this case the contingent liability to pay a further 15s. per share when called for has to be reckoned with. As regards the efficiency and profitability of a company a dividend of only 1 per cent may be declared on its £1 ordinary shares, although it is a profitable and well-managed concern, because it has paid more than their real value for the capital assets which it has acquired with the proceeds of its share issue. On the other hand a declared dividend of 100 per cent on a £1 ordinary share does not necessarily indicate either that the company is highly efficient or that it is profiteering at the expense of the consumer. It may have financed itself extensively out of undistributed

profits in the past, so that the real value of its capital assets far exceeds the nominal value of its issued capital. It may, in fact, be earning less than 10 per cent on its real capital assets, but may, nevertheless, as a result of past abstentions by shareholders, be able to declare a dividend of 100 per cent on its ordinary share capital.

The authorized capital of a company may be divided into many different types of share. Preference shares permit the holders to share in profits before other shareholders, but after debenture holders. They generally bear a fixed rate of interest but occasionally they are made "participating," i.e. they may participate in profits (over and above the fixed rate of return) with ordinary shares up to a certain maximum after the ordinary shares have received a certain minimum rate of return. In addition, Preference shares may be cumulative or non-cumulative. Cumulative preference shareholders have the right to claim any arrears of their fixed rate of return (due in respect of a previous year or years when profits were insufficient to meet their claims) before the ordinary shareholders share in the profits. Non-cumulative preference shareholders have no rights to such arrears of dividends. In some cases First and Second (or A and B) Preference shares may be issued, the First Preference shareholders being entitled to their fixed return before the Second Preference shareholders receive anything.

Ordinary shares rank for dividend without limit after all prior claims on profits have been met. They are sometimes referred to as equities and holders of them substantially bear the risks of the enterprise. The return on ordinary shares naturally fluctuates much more than the return on other types of shares and depends on the magnitude of net profits, the proportion of net profits which the directors decide to distribute (a certain proportion will probably be allocated to reserve) and the extent of the prior claims of debenture and preference shareholders. Sometimes a class of preferred ordinary shares have a right to a certain dividend return before the ordinary shareholders can participate in profits.

Deferred and Founders' shares constitute a category of deferred ordinary shares. It is generally stipulated that they share equally in profits with ordinary shares after the latter have received a certain rate per cent. Such shares are often issued,

fully or partly paid up, to reimburse the promoters of the company or the sellers of the business which the new company is being formed to acquire. It rarely happens that a limited company is formed other than to acquire and carry on a business which is already a going concern—perhaps a one-man business or partnership. Occasionally, it happens that a new limited company is formed to acquire the assets and carry on the business of two or more other companies.

A company may, by the issue of debentures, obtain capital additional to that received by the sale of its shares. A débenture is not a share—it is merely a document acknowledging the company's indebtedness to the holder for a certain sum. It is a fixed interest-bearing security, and may or may not be redeemable at some specified future date. A mortgage debenture is secured by a mortgage on the assets of the company. In this case the holder has a prior claim on the proceeds of the realization of the firm's assets in the event of it being wound up. Where different categories of mortgage debentures exist, the first mortgage debenture holders have their claims satisfied before the second mortgage debenture holders and so on. The holder of a simple debenture (unsecured by mortgage) is in the same position as any other creditor of the firm in the event of its failure: that is to say, he can claim equally with ordinary trade creditors for a share in the proceeds of realization after the claims of mortgage debenture holders have been fully met.

The debenture holder is in no sense a shareholder in the concern. He is a creditor of the company—a person who has loaned money to it at a certain agreed rate of interest. Whilst his interest may in fact be paid out of profits and his claims have a first call on any profits that are made, his claim must be met whether profits are made or not. The interest due to debenture holders is the first charge on the assets of a concern. Apart from the general riskiness of lending money to any person or corporate body, the debenture holder does not share in the risks of the enterprise, and is comparatively uninterested in whether it makes big profits or not.

Debentures may be issued singly and spasmodically, or a large issue of debentures may be made at the same time. In the first case, a debenture may be issued as a security for a

bank loan. In the second case, a large issue may be made for subscription by the public. Where a number of debentures have been issued it is usual for the company to execute a trust deed in favour of certain trustees for the debenture holders. This deed, in effect, transfers the assets on which the debentures have been secured to the trustees, whilst specifying that the assets are to remain in the possession of the firm so long as the claims of the debenture holders are met. The trustees can then safeguard the debenture holder by selling the assets or forcing the appointment of a receiver if there is any default on debenture claims. Also, the trust deed secures the debenture holders against the possibility of a further prior charge being made on the assets to their disadvantage.

4. OWNERSHIP AND CONTROL

Ownership of a company is vested in the general body of shareholders, but they are much too unwieldy a body to exercise the functions of management. Management is vested in the Board of Directors, each director being normally paid a fee for his services. The number of directors varies, and usually each director must have a minimum shareholding qualification which is laid down in the Articles of Association.¹ The Board of Directors is responsible for the general conduct of the firm and for all statements set out in the Prospectus of the company, but the majority will not be actively engaged in the day-to-day conduct of the firm's affairs. This is generally delegated to various executive officers, the chief of whom will probably be designated General Manager. The General Manager may be comparatively free from detailed supervision and control, but it is more usual for one or more active Directors (the Chairman of the Board or the Managing Director or both) to give the greater part of their time to the conduct of the business. In the latter case the executive officers are directly responsible in a very real sense to the active directors who are in effective control of the policy of the firm. A public limited company must hold an annual general meeting at which the directors submit to the shareholders an audited balance sheet, and at which the Chairman of the Board of Directors

¹ Permission to deal in the shares on the London Stock Exchange is refused if this is not the case

usually makes a general statement on the affairs of the company. At this meeting a new Board of Directors is appointed by the votes of the shareholders—or as usually happens, the existing board is reappointed. The voting powers of shareholders are laid down in the Articles of Association, and may vary considerably from one company to another. Preference shareholders may not have the right to vote unless their fixed interest claims have not been met. Some classes of ordinary shares may carry much heavier voting powers (in proportion to their nominal value) than other categories of ordinary shares. In this way control of the company may be vested in a restricted group of shareholders who possess a very limited share in the ownership of the firm. Voting procedure varies so very much from one company to another that adequate generalization is almost impossible.

The practice, particularly on the part of financial interests, of making the control of a company more secure by the limitation of the voting rights of different classes of shareholders appears to be on the increase, especially in the U.S.A.¹ Some instances have occurred in Great Britain that are not without interest. In 1938, for example, the firm of Richard Thomas found itself in financial difficulties, and approached the banks for additional finance. It was agreed that £5½ millions of Prior Lien (First Mortgage) Debenture stock in the company would be taken up by the banks, the existing First Debenture holders agreeing to their loss of priority on payment of compensation in the form of an increased rate of interest on their stock. A further £500,000 was raised for the company by the issue of ordinary stock to be taken up by the Bank of England, £100,000 of which was to carry voting control of the company. A similar case occurred in 1939, when additional capital was raised for John Summers & Co., partly by a new issue of 2,288,185 "A" ordinary shares, one of which was allotted majority voting powers.² Many other examples can be found to illustrate the growing power of financial interests over industry and the widening gulf between ownership and management.

¹ *Vide Marquand Dynamics of Industrial Combination* (Longmans, 1931), pp. 131–32.

² To be exercised by a Committee composed of the Governor and Deputy Governor of the Bank of England, the Chairman of United Steel Companies, and the Chairman of John Summers.

It will be seen that many important and difficult questions arise when it is decided to float a limited company. It is desirable to keep the authorized capital as small as possible in order to reduce registration fees. At the same time it is essential that the authorized capital should be large enough to provide for future expansion. The amount of capital issued should, from some points of view, be limited to the immediate needs of the company, but it needs to be recollected that a succession of relatively small issues of capital made over a period of years is very much more costly than one substantial issue. Whether or not the capital should be fully called at once depends very much on the nature of the business. Banks, for example, may prefer to keep a substantial reserve of uncalled capital available to meet unforeseen contingencies. The question of the proportions in which capital is to be raised by the issue of various types of stocks and shares is also very difficult to decide. Let us take, for example, a highly profitable one-man business, which is to be refloated as a public limited company, which needs a good deal of capital for expansion, and which is very confidently expected to be highly profitable. A large proportion of the capital will probably be raised by the issue of debentures and preference shares. A comparatively small proportion of ordinary shares can then be expected to earn very high dividends. Such a company is said to be highly "geared." This is all the more likely to happen if the proprietor of the business (or the promoters of the company who have secured an option to buy the business and are floating the company to this end) wishes not only to reserve as high a proportion of the profits to himself as possible, but also wishes to retain permanent control of the company. A majority of the restricted number of the ordinary (voting) shares will probably be allocated to him in payment for the assets of his business which he is, in effect, selling to the company.

The prospective purchaser of ordinary shares will be most interested in the profit-making possibilities of the company. But the "gearing" of the company will also be an important consideration to him. Other things being equal, he will be less inclined to purchase the greater the volume of fixed interest bearing commitments which have to be met before the ordinary shares rank for dividend. Under certain

circumstances, therefore, the promoters of the company will be careful not to gear the company too high for fear of lessening the attractiveness of the issue to the potential investor.

Reference has already been made to the fact that companies are subject to the provisions of the Companies Acts; and the chief of these is the Act of 1929. It is one of the functions of the Registrar of Companies to see to it that the Act is complied with. The provisions of the Act cannot be detailed here, but its general purpose is to protect the investor against fraud, and to facilitate the control of ownership over management without placing unreasonable restrictions on the enterprise and initiative of management.

We have already noted the possibilities of the separation of ownership from management, and also the possibilities of abuses developing in connection with the floatation and finance of companies. But it is worth recalling at this point that considerable dissatisfaction has existed for some time with the Companies Act (1929) and that the Cohen Committee which was appointed in consequence, reported in 1945 on the reform of Company Law.¹ The Committee reported in favour of tightening-up the law in several important respects which are relevant to the preceding discussion. Their report suggests that directors should be held responsible for material *omissions* from the prospectus, and that they should show good grounds for relying on reports of technical experts—favourable extracts from which are often quoted in prospectuses. Also, it is recommended that the period of notice for general meetings of shareholders should be extended, that directors should be elected separately and not *en bloc*, and that an ordinary resolution should suffice for the removal of a director. Furthermore, this Committee recommends that more information should be provided in the published accounts for the guidance of the public, that a profit and loss account should be published in addition to the balance sheet, and that the beneficial ownerships of more than 1 per cent of any class of capital should be divulged. The general purpose of each of these reforms should be clear enough. They are designed generally to tighten up the control of management by the shareholders, to limit the possibilities

¹ Cmd. 6659. The Companies Bill introduced into Parliament in December, 1946, follows closely the lines of this report. The Bill received the Royal Assent in August, 1947.

of defrauding investors by means of "doctored" prospectuses, and to provide additional information to the public and shareholders concerning the financial results of the business and the real ownership (often concealed) of substantial holdings of shares.

5. OTHER FORMS OF ENTERPRISE

The above summary treatment of the one-man business, the partnership, and the registered company, does not cover all the possible types of firm. Certain joint-stock enterprises are registered under special Acts (Building Societies Acts, Friendly Societies, Acts and the Industrial and Provident Societies Acts) and are not, therefore, companies in the sense that they are subject to the provisions of the Companies Acts. Any society carrying on business may be registered under these Acts and is subject to special privileges and restrictions. Registered societies are free (as such) from liability to income tax and the liability of members is limited. Their rules must be registered with and approved by the Chief Registrar of Friendly Societies, their accounts must be audited by a public auditor, single shareholdings are restricted to £200, and an annual return must be made to the Registrar whose function it is to see that each society is working within its rules and that the Act under which the society is registered is being complied with. Many of the societies registered under these Acts (thrift associations, trade unions, trust funds, etc.) are not "firms" in the ordinary sense of the word. The great majority of the remainder are engaged in wholesale and retail trading (e.g. Co-operative Retail Societies and the Co-operative Wholesale Societies) and in the finance of house purchase (Building Societies). On the whole, undertakings registered under these Acts are not significant for a study of industrial organization, though the Co-operative Wholesale Societies are engaged in a wide variety of manufacturing activities, and many small firms engaged in textile and clothing production, boot and shoe manufacture, printing, etc., are also registered in this way.

Other types of firms may be briefly dismissed. Some large firms (e.g. Bank of England, East India Co., etc.) are incorporated by Royal Charter. More important from our present point of view are statutory companies or corporations which

are incorporated under statute. These are generally engaged in some public service (e.g. railways, gas, electricity and water supply, etc.) for which the grant of monopoly powers is usually considered expedient. The statute under which these undertakings are usually set up generally provides for some restriction of earning power, and in other ways limits the abuse of monopoly powers. They vary very much in detail—some, like the railways, being very similar to public limited companies. Others are very dissimilar in that they have no shareholders and are administered by persons appointed by the State. Where such concerns have been established on a national or considerable regional scale, they are sometimes referred to as Public Corporations, e.g. The Central Electricity Board, The London Passenger Transport Board, etc. So far, the statutory company has not become prominent in the field of manufacturing and extractive industry with which we shall be mainly concerned. But if, as appears likely at the present time, important industries are to be nationalized, they are likely to become a much more significant form of enterprise in the near future. Further reference to them will be made in this connection in Chapter VI.

CHAPTER II

The Finance of Industry

WE have now to consider how industry raises the money with which to exploit its productive opportunities. In this connection it is natural to think first of the banks which exist mainly for the purpose of receiving money on deposit and lending it out to sound borrowers.

I. THE ROLE OF THE BANKS AND OTHER FINANCIAL INSTITUTIONS

As a matter of fact, the banks are not important sources of industrial finance in this country.¹ They are extremely conscious of their obligations to their depositors and since the bulk of bank deposits are liable to instant withdrawal or withdrawal at short notice, are loth to take the risks which industrial financing frequently entails. These risks are of two kinds, the risk of total default and the risk that although the borrower may prove to be sound, he may not be able to repay the loan at the convenience of the bank. The risk of total loss of the money loaned is normally greatest when the bank is asked to advance money to assist in the establishment of an entirely new enterprise. Although the bank manager may be satisfied that the person asking for a loan is an honest man, he may have little or no evidence of his business ability and will probably lack the technical knowledge to judge the prospects of the new concern. Unless the loan required is small and well-secured, it is unlikely that the bank will consider advancing money for this purpose.² But the banker is on firmer ground

¹ Bank money made available to industry (mainly for working capital purposes as explained below) normally comes under the heading "Advances to Customers" in a bank balance sheet. In August, 1946, the total advances of British banks (excluding overseas business) exceeded £900 millions, of which just over 50 per cent could be classified as industrial, i.e. excluding personal, professional, financial, charitable, and local government advances. If advances to agriculture, retail trade, entertainment and transport are also excluded from the industrial group, the proportion is reduced to about one-third.

² One large British deposit bank established in 1944 a department for making special advances based "as much upon the capacity and integrity of the borrower as upon his material resources." This, however, does not represent normal deposit banking practice and the aggregate amount advanced has been comparatively small.

in considering an application for a loan from a profitable and going concern. Here the greater risk is that of illiquidity, and the banker will normally be prepared to make an advance provided it is required for working capital purposes and can be regarded as self-liquidating. Thus, for example, the banks will be prepared, in approved cases, to provide finance by way of loan or overdraft for the purchase of raw materials, which when worked up and marketed will provide the funds for repayment of the loan in a relatively short space of time. But the banks will not normally provide medium- and long-term capital for industry, for the purchase of machinery, for buildings and the like. Here the risks of illiquidity are too great, and the risk of default can rarely be completely discounted. The banks maintain, with some justification, not only that such risks are incompatible with their duty to their depositors, but also that the provision of medium- and long-term capital is the business of the proprietor (in the case of a registered company, the ordinary shareholders) of the firm who draws the profits. The banks, apart from all question of risk, will be reluctant to take up ordinary shares in a company since this may involve them in functions of industrial management for which they are in no way fitted.

It would be unwise to conclude from this that the banks, although substantial providers of working capital for industry, never provide medium- and long-term capital. Loans may be made for a short period of, let us say, six months, but the loan may be so systematically and regularly renewed that the banks are, in fact, providing long term capital. The loan may be renewed automatically in this way because the bank continues to be quite confident of the ability of the borrower to repay or, more often perhaps, because the bank is aware that if repayment is pressed for the borrower will be forced into bankruptcy, in which case the bank (ranking after mortgage debenture holders and equally with other trade creditors) may get little or nothing in settlement of its claims.

This latter contingency is sometimes responsible for the banks continuing to prop up with further loans, firms which on purely economic grounds would be best forced into liquidation. The prospect of losing altogether money which has been advanced to a firm is so distasteful that as long as any hopes remain of

infusing new life into the concern, the banks may continue "to throw good money after bad."

In this way, banks may find themselves more heavily involved in industrial management than they wish to be. As heavy creditors of the firm, they cannot be indifferent to the way in which it is carried on. At some stage or other, financial reconstruction of the firm to which it has lent money may become necessary, and the banks, in order to save what they can, may be forced to accept a paper settlement of their claims in the form of shares in the reconstructed firm. Ownership of these shares may give them an important voice in management and, although the banks may not have sought such influence outside their purely financial sphere, they cannot ignore the responsibility thereby thrust upon them. As the influence of finance-capital interests in industry grows, the banks become subject to a great deal of criticism in consequence. It is alleged not only that banks and finance houses are undertaking technical management functions which are outside their proper sphere and which they are not properly qualified to undertake, but also that their influence may be exerted in favour of their wider financial interests rather than the efficiency and profitability of particular firms. Thus, for example, they might use their commanding position to encourage uneconomic combinations and the restriction of competition in the hope of protecting the existing capital of industries in which they are interested.

There can be no doubt that the influence of British banks in British industry has been growing. During the post-1918 boom the banks advanced money freely to many concerns in the cotton, steel, and shipbuilding industries. When the boom collapsed they found that much of this credit had become frozen. In the steel industry a series of financial and organizational reconstructions took place, often under pressure from the bankers,¹ who became important shareholders in the reconstructed firms as a result. Firms in which the banks held important interests later became active sponsors of the Iron and Steel Federation (1934)—a federation of sectional associations much interested in price fixing and controlling new

¹ *Vide* D. L. Burn, *Economic History of Steel Making* (Cambridge, 1946), pp. 438-42.

development. In the cotton industry the formation of the Lancashire Cotton Corporation (1929) was largely inspired by the banks who were the principal creditors of most of the firms amalgamated in the Corporation. One commentator has remarked that "The Lancashire Cotton Corporation is perhaps little more than another bankers' combination thrown together to enable the banks to liquidate their questionable holdings."¹ The Corporation, now easily the largest single unit in the industry, took the lead during the nineteen-thirties in encouraging the formation of price-fixing associations. In 1936 the Spindles Board was set up to reduce surplus productive capacity in the industry by purchasing and eliminating surplus spindles. On the strength of a Treasury guarantee the banks advanced money to the Board for this purpose and the Lancashire Cotton Corporation alone disposed of 800,000 surplus spindles in this way. In the ship-building industry a similar body (National Shipbuilders Security, Ltd.) was set up to purchase and eliminate from production, surplus shipyards. The banks assisted in the financing of this venture and many of the firms which offered their yards for sale to N.S.S., Ltd., did so under pressure from their bank creditors. Although the elimination of excess capacity in both cotton and shipbuilding was intended to promote efficiency through full capacity working of remaining firms, there can be no doubt that it also facilitated, through the elimination of many weak sellers, the adoption of monopolistic practices.

These examples are not intended to suggest that the influence of the banks on these industries was unwholesome, nor are they advanced as final proof of the criticisms which have been made regarding the intrusion of finance-capital interests into industry. There can be no question that from many points of view the banks have performed valuable services to British heavy industry. They forced much needed financial reconstruction on firms and often agreed to a heavy writing down and paper settlement of their cash claims. When reconstruction was completed further working capital was often provided by the banks which, it was hoped, would give the firms a new lease of life. In addition the banks financed much new technical development particularly in the iron and steel industry. But

¹ E. P. Learned in the *Harvard Business Review*, July, 1930, p. 501.

these examples do show that British banks, in spite of their ultra-cautious attitude to industrial financing, are, in fact, much more heavily involved in industrial affairs than is generally supposed.

This traditional attitude of the banks to industrial financing in this country was criticized by the Macmillan Committee in 1931.¹ It was suggested that the banks might play a larger part in the provision of medium- and long-term capital to large-scale industry. It also called attention to the difficulties experienced by small and medium-sized firms in raising amounts of capital too small for a public issue, and the formation of a special company for this purpose was suggested.

Some steps had been taken by the banks prior to 1930 to meet the needs of large-scale industry. In 1929 the Bank of England floated the Securities Management Trust as a private company to take over the management of securities which came into its hands as a result of the financing of industrial reorganization schemes and to perform any industrial management functions devolved therefrom. The Directorate was composed of representatives of the heavy industries, industrial and financial experts, and representatives of the Bank of England. A technical staff was maintained to assist in the preparation of reorganization schemes and to advise the Bank of England upon them.

In 1930 the Bankers' Industrial Development Company was formed, the capital of which was subscribed by 20 joint-stock banks, 25 other finance and issuing houses, and Securities Management Trust—the Bank of England retaining effective control. The Company was empowered to take part in industrial management, and in practice it appears mainly to have concerned itself with the financing of projects approved by the Securities Management Trust. It has been mainly concerned with salvage work in the depressed basic industries—particularly cotton, steel, and shipbuilding. It was the Bankers' Industrial Development Company which sponsored capital issues for much new technical development work in the steel industry, which provided the funds for the Spindles Board and the National Shipbuilders Security, Ltd., and which was

¹ Report of the Committee on Finance and Industry, Cmd. 3897. Pars 375-404.

instrumental in raising new working capital for the Lancashire Cotton Corporation in 1930.

During the 'thirties a number of companies were established with the intention of filling the other deficiency to which the Macmillan Committee had called attention, viz. the provision of capital for small businesses. In 1934, Credit for Industry, Ltd.,¹ was set up to make loans to small businesses requiring additional capital in semi-permanent form. Loans of up to £50,000 are made, repayable over periods up to twenty years, and the loan is generally secured by mortgage debenture. Firms making application for loans are generally required to show a good profit record over at least three years preceding the date of application. It should be noted that Credit for Industry, Ltd., lends money rather than invests it, and does not seek to participate in management and profits.

Also, in 1934, the Charterhouse Industrial Development Company was founded by the Charterhouse Investment Trust (an issuing house to which we shall refer later) with the participation of the Prudential Assurance Company, Lloyds Bank, and the Midland Bank. This Company was intended to provide money in amounts up to £100,000 for small businesses. The Company required to be satisfied that the firm applying for a loan had a good profit record, was competently managed, and needed the money for new development rather than for working capital purposes. It sought to invest rather than lend money, which has generally been advanced in the form of payment for participating preference shares in the firm which was being assisted.

In addition to the above there are a number of smaller companies operating along similar lines, such as Leadenhall Securities Corporation (a subsidiary of Schroders, a famous issuing house), the New Trading Company, and the Industrial Finance and Investment Corporation. Generally speaking, all of these companies only assist firms that are already going concerns with a good profit record, but, on being satisfied of

¹ A subsidiary of United Dominions Trust, Ltd., which was formed in 1930 to assist new enterprise by financing the purchase of equipment and machinery on hire-purchase terms. United Dominions Trust, Ltd., does not provide permanent capital, though the effect of its operations is to reduce the capital requirements of new enterprise. It was originally controlled by the Bank of England, which subscribed two-thirds of its capital, but the Bank has now disposed of the bulk of its interest.

the soundness of a proposition, they are prepared to invest by taking up preference or ordinary shares. The firm may be given the option of redeeming the money advanced by repurchase of the shares at some future date.

It should be noted in passing that apart from the banks and issuing houses, an increasingly important part is being played in this field by the big insurance companies. We have already mentioned the participation of the Prudential Assurance Company in the Charterhouse Industrial Development Company. This and other insurance companies have also assisted directly in the financing of industrial enterprise by making loans on security.¹

The degree of success which has attended these efforts to fill the Macmillan "gap" is a matter of opinion, but it is certain that they have not developed on the scale which had been hoped for. Many people have been led to doubt whether there was, in fact, such untapped demand for industrial capital as the Macmillan Committee believed. But the new machinery obviously fell short of what was desirable if all reasonable demands were to be met and if industrial enterprise was to be uninhibited by lack of capital. The Bankers' Industrial Development Company was mainly engaged on salvage work, and only in a limited sphere was it interested in financing new development. The Company certainly did little to provide medium-term capital for large-scale industry as a whole, i.e. capital which was needed for too long a period to be obtained by bank overdraft and too short a period to justify a public issue. This was a need to which the Macmillan Committee had drawn particular attention. Nor was it to be expected that the other institutions mentioned above would completely meet the needs of small businesses. They were prepared to take few risks, and any person attempting to start up in business to exploit some new idea or invention or to introduce some new product to the public, stood little chance of receiving assistance. Generally speaking only established businesses with good profit

¹ It is perhaps noteworthy in this connection that when the banks secured control of Richard Thomas and Company in 1938, Mr. E. H. Lever, the Secretary of Control of the Prudential Assurance Company, was appointed to the Committee of Control—presumably representing the trustees for the Debenture holders. He ultimately became Chairman of Richard Thomas and Company on the displacement of Sir William Firth in 1940.

records and with a good chance of showing a fairly quick return on additional capital investment were considered sound candidates for assistance.

It is not surprising, therefore, that two new financial institutions were established in 1945 in a further effort to improve the provision of capital for industry. The larger of the two—Finance Corporation for Industry—had its capital of £25 millions subscribed by a number of insurance and investment companies and the Bank of England. It has borrowing powers up to £100 millions, the money being provided mainly by the deposit banks. Accommodation will generally be provided for industry by means of long- or short-period fixed-interest loans secured by a mortgage on the assets of the borrower.¹ Such assistance will be provided in approved cases where normal bank accommodation or the raising of capital by a public issue is difficult or inappropriate. The intention seems to be that the F.C.I. should carry out similar functions to those of the Bankers' Industrial Development Company, except that its emphasis will be on new development rather than reorganization.

The smaller institution—Industrial and Commercial Finance Corporation—will provide medium- and long-term capital for small businesses in amounts up to £200,000. Its capital of £15 millions is provided by the Bank of England and the deposit banks. This Corporation has borrowing powers up to £30 millions, this money being provided by advances from the member banks. It may advance capital either on fixed interest terms or it may secure some participation in the equity of the borrowing concern at the discretion of the Directors.

Until some years have passed it will be impossible to say whether or not these institutions have justified themselves. But it is difficult to see what class of business they can cater for which is not already catered for elsewhere. In both cases it will be substantially true that deposit bank money is at risk. There is no indication that I.C.F.C. will consider risks which will not be undertaken by existing institutions or independently by the banks themselves. For F.C.I. there is, perhaps, a stronger case. It should be able to borrow cheaply, and may be in a

¹ It is not specifically debarred from participating in the equity of the businesses it finances. Vide *Economist*, January 27th, 1945, p. 120.

position to advance capital more cheaply and in larger amounts than could be raised in the open market. It may, therefore, be able to cater for large-scale development projects, which, by reason of their scale and the time necessary to bring them to full fruition would not appeal to any of the established agencies for capital provision. But this, nevertheless, entails a supposition (apart from the question of the terms on which the capital is raised) that the F.C.I. will consider risks which are, in some degree, abnormal. Increased use of its facilities may be made if it is prepared to assume the greater risk of participation in the equity of the concern which is being financed. Few firms will wish to increase the volume of their fixed-interest indebtedness beyond a certain point. But the proof of the pudding will be in the eating.¹

So far we have been mainly concerned with the extent to which the banks and finance houses of various kinds assist in the financing of industry. Before we go on to consider alternative ways in which industry provides itself with the capital it requires, it should be noted that in practice industry provides itself with the bulk of its new capital. That is to say, new development work is financed out of profits which have not been distributed to the shareholders. This means, in effect, that the value of the capital assets of a firm have been increased while its paper capitalization remains unchanged. This need not detain us further, but it is a point which is frequently overlooked.

2. NEW CAPITAL ISSUES

When a public registered company starts its life it most frequently raises the capital it requires by a public issue of

¹ Up to November, 1946, I.C.F.C. had called up £1½ millions of its capital and had borrowed a like amount. It had agreed to provide funds for roughly 160 borrowers amounting to about £5 millions. Approaches to the Corporation are normally made through the borrower's banker and in some cases the latter provides new capital additional to that provided by the former. The methods of financing employed by I.C.F.C. are extremely flexible. Funds may be loaned with or without security, repayable by instalments over a period of years. Alternatively or additionally, participating preference or ordinary shares in the borrowing concern may be taken up. Acceptance by the Corporation of a part of the "equity" risk is usually accompanied by special conditions, viz. that part of the profits shall be ploughed back into the business and that close contact shall be maintained between the Corporation and the borrower. Occasionally the Corporation may appoint a member of the Board of Directors. Vide *Midland Bank Review*, November, 1946, pp. 7-10.

shares, i.e. it offers its shares for subscription by the general public. Alternatively, an existing company, within the limits of its authorized capital, may make a new issue of shares. The importance of the public issue as a means of raising new capital for industry, however, is frequently exaggerated. As previously stated, most new public companies are formed for the purpose of taking over some existing business which is being converted into a public company, or it may be two or more public companies which are being merged into a new public company. Much of the money raised by share issue may be used to pay in cash for the business which is being taken over or, more probably, many of the shares issued are not paid for in cash but offered to the proprietors of the business in payment therefor.

It is very rare for an entirely new business to be floated immediately as a public company because, having no previous trading record, it is impossible to form any sound opinion as to its prospects. The public will, therefore, be reluctant to subscribe to its shares, and even if persons could be found to take them up, it would be impossible to create a market in them on the Stock Exchange until the degree of success of the new company became apparent.

In spite of what has been said above, much new capital for industry is raised in the open market by public issue.¹ The purpose of transforming an existing business into a public company is generally to facilitate its further development and the size of the issue will normally be gauged so as to provide the money for new development after the business taken over has been paid for and the expenses of the issue met.

An issue of capital is generally handled on behalf of a company by an institution specializing in this business. It may be one of the old-established merchant banking houses (Barings, Rothschilds, Schroders, etc.) which combine issuing with acceptance business and which, in the past, have generally been associated with the floatation of foreign loans in London. Alternatively, it may be one of the finance houses like Charterhouse Investment Trust, which specializes in the financing of

¹ It should be noted that during the 1939-45 war new capital issues were forbidden, except with the consent of the Capital Issues Committee. By the Investment (Control and Guarantees) Act, 1946, this control is to continue indefinitely.

industrial development, or some syndicate formed by the promoters of the company for the special purpose of handling the particular issue. Occasionally a firm of stockbrokers may handle the issue themselves.

Where the public are being invited to subscribe direct, a prospectus, drawn up and signed by the directors of the new company, is issued by the company's bank which undertakes to receive applications for shares, and such money as is payable on each share on application. The firm which has agreed to act as brokers to the issue generally agrees to underwrite it, i.e. the brokers agree to take up such shares as are not taken up by the public. For this service, which often entails considerable risk, they receive a commission. By means of sub-underwriting contracts the brokers may contract out of part of their risk, which is borne by the sub-underwriters. In addition to their commission the brokers may have the right to subscribe for part of the shares on the same terms as they are available to the public. This is a valuable concession when the shares are likely to be much in demand, and they will probably be disposed of at a handsome profit when dealing in the shares opens on the Stock Exchange. When the last date for the receipt of applications is past they are opened and examined. If the issue is not fully subscribed, each applicant is allotted the shares for which he has applied. If the issue is over-subscribed each applicant receives a proportional allotment. A further payment on the shares is then made by persons to whom the shares have been allotted, this amounting to the balance of the purchase price of the shares if they are fully paid up.

The offering of securities by means of a prospectus inviting applications from the public is only one method by which an issue of capital may be made. The securities may be "placed" by means of an "offer for sale," i.e. a company sells an issue outright to a third party (generally an issuing house) which subsequently offers them to the public at a fixed price. An alternative method is the private placing followed by introduction, i.e. the company making the new issue places some or all of the securities, through the broker or issuing house in charge of the issue, with various Stock Exchange firms; and permission to deal having been applied for and received from the Stock Exchange Council, dealings in them are initiated on

the Stock Exchange. Occasionally neither of the above methods is employed. The new securities are offered to existing shareholders, who are given the option of buying at a favourable price.

The public issue is still the method usually employed, but the placing followed by introduction method is growing in popularity, and this has given rise to much debate on the pros and cons of the various methods. From the outsider's point of view the public issue has much to commend it. Full publicity is given to the issue and allotments are made proportionately to all applicants with the result that the issue is widely dispersed, and there is little chance of the shares being cornered and the market "rigged." From the point of view of the company making the issue the chief drawback of the public issue is the expense involved. This varies a good deal. Underwriting, bank, advertising, and legal charges, etc., may absorb less than 5 per cent of the capital raised, or as much as 15 per cent in the case of a small issue. The offer for sale is a cheaper method of raising capital since many of the expenses of a public issue are then avoided by the issuing company.¹ Also the shares are allocated on a proportionate basis to members of the public who apply for them when the offer for sale is made. But the method has the disadvantage, which may be pronounced when the issue is a popular one, that the public may have to pay a far higher price for the shares than the issuing company has received. The issuing company may, nevertheless, prefer this method as a way of avoiding the initial expense, risk, and inconvenience of a public issue. No company can be certain of the response to an appeal for public subscription to its shares until the issue has been made.

The "placing followed by introduction" is also much cheaper and more flexible than the public issue for very much the same reasons as apply in the case of the offer for sale. But the disadvantages from the investor's point of view would seem to be greater. The number of securities issued would be known, but the number available in the market when the dealings commence might not be known. Holdings of the shares prior to introduction would be concentrated in relatively few hands which leads to possibilities of collusive action to create an

¹ An "offer for sale" may, of course, be underwritten.

artificial scarcity of the securities, thus forcing up the prices to a level quite unjustified by their prospective earning power. Thus, for example, a small proportion of the shares may be offered to Stock Exchange firms at a price which is reasonable, having regard to the price at which they had been acquired from the issuing company. When dealings commence on the Stock Exchange, public competition for the limited number of shares may force the price up to a very high level at which other holders of the shares may be able to dispose of their holdings at a handsome profit. The following quotation from the *Economist* may be used to illustrate the point.¹

Surprise was caused by the decision of the Stock Exchange Council on Thursday last week to refuse permission to deal in 1,200,000 5s. ordinary shares of Douglas Holiday Camps. The refusal was not directed (one may infer) against the investment merits of the shares, but marked instead the Council's lack of satisfaction with the marketing arrangements for the line of shares actually placed. Standard Industrial Trust acquired 199,993 shares at 7s. 1½d., and these were to be parcelled among the London and interested provincial markets at about 7s. 9d. London jobbers had arranged to meet applications for about 100 shares at 8s. 1½d. These figures are not open to any real objection. But it happened that they were out of relation with the prospective dealing price if permission to deal had been granted. There were well-founded expectations of large orders at 12s. 6d. to 15s. which simply could not have been satisfied from the supply of shares actually placed.

Obviously, those responsible for the placing had under-estimated the public response to the issue. Revised marketing arrangements have been made to the satisfaction of the Stock Exchange Council, by which an increased number of shares have been placed with the market at 10s. Thus the issuers will benefit substantially by disposing of a larger number of shares at a higher price. This will be no small compensation for their abortive work and expense. But even the revised terms of placing have caused the same sort of heart-burning as many recent placings have done, for investors in London and the provinces who were not in close touch with the market have still been forced to pay a handsome profit to the "insiders" if they wished to obtain any shares. That is the real crux of the criticism of the placing method as distinct from the offer for sale. The most careful distribution of shares in the market as a preliminary to the start of dealings may still give the appearance of an "insider's kill" if public demand for a limited supply of shares drives the opening price up in a scramble to buy.

¹ 26th January, 1946. pp. 148-9.

There is nothing implied here other than a miscalculation of market conditions. An outsider is not to know whether or not the balance of the shares was intended to be sold in this case. But it illustrates how the placing method may give rise to abuses or the suspicion of abuses which undermine the confidence of the investing public.

But whichever method of issue is adopted there are always possibilities of abuses developing. It is not easy to legislate against these abuses, since new ways around the law are always being found. But the Cohen Committee¹ has made several suggestions for tightening up the law in respect of the making of new issues. To guard against the activities of "stags" (i.e. persons who apply for shares in a new issue, which it is expected will be over-subscribed, in the hope of selling out at a profit to unsuccessful applicants) it is proposed that applications should be made irrevocable a short time after the opening of the lists. It is further proposed that a minimum compulsory interval should elapse between the publication of the prospectus and the opening of lists in order to enable the issue to be fully discussed and investigated. A further safeguard to the investing public is the suggestion that it be made compulsory for application for permission to deal to be made promptly with provision for the cancellation of allotments and return of cash if such permission is refused within 21 days.

The informal control exercised by the Council of the Stock Exchange is, however, likely to be more effective than any legal provision. The Council, of course, takes no responsibility for the merits of an issue, but its regulations are designed to secure compliance with the Companies Acts, to prevent fraud, and to secure a free market in the securities. Its most powerful weapon is its complete discretion in granting or withholding permission to deal in the shares on the Stock Exchange. No issue of shares is likely to succeed if such permission is refused.

3. OVER- AND UNDER-CAPITALIZATION

It frequently happens that a company is over-capitalized, i.e. securities in the company may be issued in excess of its capitalized earning power. This may happen for various

¹ See p. 15.

reasons. The business which has been taken over by the new company may have been taken over at too high a valuation. During the boom which followed the 1914-18 war, many cotton concerns were refloated as public joint-stock companies at very high capitalizations based on expectations of the continuance of abnormally high profits. Subsequently such over-capitalization proved to be a very serious handicap to the industry and many financial reconstructions took place. Many efficient concerns found themselves able to pay only very low dividends (if any) on their considerable volume of ordinary shares, with the result that the raising of new long-term capital or the provision of additional working capital was found to be impossible. Financial reconstruction, which generally involved the writing down of the nominal value of ordinary shares, was found to be a necessary preliminary to obtaining additional finance for technical reconstruction.

When, during a boom period, such an orgy of reflootation results in serious over-capitalization, it does not always mean that the former proprietors of a business have made a good thing out of it at the expense of the investing public. The proprietors may have been paid in "watered stock" which quickly depreciates when over-capitalization becomes apparent. Even when the proprietors have been paid in cash the price has not necessarily been unreasonable. A company promoter may have secured an option on the business at an agreed and reasonable cash price. He then proceeds to float a company to which he sells the business at a much inflated price and for which payment is taken in shares. The shares may then be quickly disposed of in the open market at a high price before the earning record of the company makes it apparent that it is over-capitalized.

Apart from these possibilities a certain degree of over-capitalization may be caused by heavy issue expenses, all of which have to be met from the proceeds of the share issue. It follows that a company may be under-capitalized, and this may have equally serious consequences. If under-capitalization merely means that a company has been financing itself out of profits to such an extent that the nominal value of its shares is far below the real value of its capital assets, then no particular harm is done. It may safely be presumed that such a company,

unless engaged in rash over-development, will have no difficulty in securing adequate working capital, either from within the business itself or from its bankers by way of overdraft. But if under-capitalization means that its capital issue is low in relation to the value and needs of the business, then serious damage may be done. The business may lack ready money for taking favourable business opportunities (e.g. "bargains" in raw materials), the execution of orders may be delayed with consequent loss of consumers' goodwill, and so on.

4. CAPITAL NEEDS OF THE NEW BUSINESS

All the facilities available for the finance of industry which we have so far reviewed apply mainly to businesses which are already going concerns and which can be judged to some extent on their past record. How, then, is an entirely new business financed? Generally speaking, an entirely new business is started on a small scale by a single person or a small group of persons who contribute the initial capital out of their own resources. The new business may be assisted to a very limited extent by the banks on the strength of their personal knowledge of the person or persons concerned. Suppliers of raw material, etc., may help by granting generous initial credit terms to the new business. Other sources of finance may be available, e.g. from friends who are prepared to risk part of their savings in the new enterprise. A more usual method of securing outside finance is to seek an introduction to a person looking for a suitable investment through a solicitor or accountant who has a wide knowledge of persons with surplus funds at their disposal. Such persons may also be sought by newspaper advertisement.

But it is clear that financial considerations constitute a serious obstacle to the establishment of new firms which are not off-shoots of existing firms. No one can tell how much untapped entrepreneurial ability is lost to society because able individuals are unable to command the resources to exploit new ideas, inventions, and productive opportunities. One of the merits of joint-stock enterprise is that it can offer a suitable career to such persons at a high salary. But a person who would "do well on his own" will not always commend himself to the large industrial concern, and, even if he is acceptable

he may nevertheless find that his ability is not given free rein in a salaried managerial occupation. A person with a specific new idea or invention to sell can always hope to interest some existing firm in it. But inventiveness frequently reaps a poor reward under such circumstances and the company acquiring the invention will sometimes be more interested in suppressing it than in using and developing it. One is left with the idea that society might be enriched if existing facilities for the finance of industry could be improved in this respect. The advantage to-day lies too much with the going concern and particularly, as we shall see later, with the large firm. The firms that get started owe too much to chance and favourable initial financial circumstances and hardly anything to a selective process which ensures that only the best risks are taken. It is difficult to believe that industrial productivity is advanced as it might be since new development depends so much on the enterprise of the firm which has "already arrived." For many firms, after a certain stage in their growth has been reached, there is a tendency to relax and to permit themselves to be carried forward, if at all, by the weight of their own inertia. If new firms could be more easily started the older and often less progressive firms might quickly be pushed aside by vigorous new growth.

The difficulties of financing new business enterprise became apparent when efforts were being made during the thirties to attract new industrial activity to the depressed or "Special" areas. The Commissioner for the Special Areas stated in his second report (1936)¹—

There is no need here to examine at length the reasons why difficulty is experienced in obtaining capital to finance new industries in the Special Areas. The all-important fact is that the difficulty exists and is the subject of constant representation from each area. It is difficult to make issues for public subscription for companies requiring a small amount of capital. It is not the function of the Joint-Stock Banks to finance new enterprises. The Merchant Banks do not generally interest themselves in small concerns needing a few thousand pounds, and the organizations which have been specially created to deal with the finance of these concerns seem to devote their attention mainly to the expansion

¹ Cmd. 5090, p. 15. It should be noted that greater difficulty might be experienced in securing finance for new firms in the depressed areas than elsewhere.

of businesses which can show a satisfactory balance sheet and have assets to offer as security. I have referred many inquiries to these organizations, but very few have been able to give the proof of their "credit worthiness" which is needed before assistance can be obtained.

As a result of recommendations by the Commissioner, The Special Areas Reconstruction Association, Ltd., was formed for the purpose of providing additional capital to enable new industrial enterprises to be established, or existing undertakings extended, in the Special Areas. The maximum loan to any one borrower was fixed at £10,000 and the life of the company was limited to ten years. The State made a contribution to management expenses and guaranteed the company against losses up to 25 per cent of the loans outstanding, the State's liability being limited to £1 million. The Company raised its capital by an issue of ordinary and cumulative preference shares. Applicants for loans were required to satisfy the Company that there was a reasonable prospect of the business succeeding, and that adequate financial facilities could not be obtained from other sources.

It is clear, however, that such a restricted and temporary expedient can do little to close the gap in existing facilities for financing new and small firms. It seems clear that private enterprise is unwilling to assume the abnormal risks involved, and that State intervention will be necessary if the gap is to be closed. State intervention may take the form of a direct loan or merely the guarantee of a loan—in either case the State will be assuming the risk. But any form of State-backed organization for this purpose will have to show, not only courage and vision in the assumption of risks, but also sound judgment of the integrity and entrepreneurial ability of applicants for assistance.

There are already signs of increased State activity in this field. By the Distribution of Industry Act (1945), the Treasury may assist any individual who proposes to carry on an undertaking in a "Development" (formerly "Special") Area by making loans or by making annual grants towards the cost of paying interest on money borrowed. By the Investment (Control and Guarantees) Act (1946), the Treasury is empowered to guarantee the interest and principal of loans made for the

reconstruction and development of industry up to a limit of £50 millions per annum. Clearly this makes provision, not only for the assistance of new enterprise, but also enables the Treasury to assist in the development of existing undertakings which may be finding difficulty in arranging adequate finance in the ordinary way. The extent to which these powers will be used to close the "gap" referred to above remains to be seen.

5. THE COMPANY PROMOTER

We have so far given the impression that the floating and financing of new companies is mainly the business of various specialized institutions which act on behalf of the owners or potential owners of some business which is being acquired by the new company, and that the subsequent management of the concern would be the business of such owners. In point of fact, however, the floatation and finance of new companies is often the business of professional company promoters. These promoters make it their business to seek out favourable opportunities for the establishment of new companies, e.g. new techniques to be exploited, small firms which may be developed, existing companies which may profitably be combined, etc. In so doing they undoubtedly perform valuable services which are entitled to due reward. An option to buy is secured on any assets which the new company proposes to acquire, the support of underwriters is obtained, the company is formed, and a public issue of securities in the new company is subsequently made. The company promoter will then normally take payment for his services in the form of shares in the new concern.

There are many obvious dangers associated with the activities of the professional company promoter. He will probably sell out his shareholding at the first favourable opportunity and turn his attention to fresh fields. Under the supervision of a "dummy directorate" the new company may be left to the direction of paid managers whose interest in the concern is limited. Its affairs will probably not be conducted with the same enterprise and enthusiasm as when persons, having a substantial ownership interest, float a company with the intention of retaining a permanent and active interest in its management. Also, there is the considerable danger that worthless projects may be promoted and the investing public persuaded

to invest in them to the advantage only of the company promoter.

The promoter may decide to retain his interest in the company though taking no active part in its management. Matters may be so arranged that the stock which he acquires gives him voting control of the firm. It sometimes happens that persons whose interests are mainly financial rather than technical obtain control in this way of a wide range of companies engaged in many diverse forms of industrial activity. Consideration of the activities of the company promoter reinforces what has been said above concerning the growing influence of finance-capital interests in modern industry. No man can be master of all trades, and apart from this, the shareholders of one firm may suffer because it is controlled by a person or group of persons who have wider interests which conflict with their interest in this particular firm. Whilst the present danger of the specialized skill and experience of industrial managers being heavily discounted by the emergence of a new race of commercial capitalists can easily be exaggerated, they cannot be lightly ignored.

We have now viewed very briefly the forms which an industrial concern may take and the facilities available for its finance. Both these topics will be found to bear intimately on more general questions of the organization of industry. The possibilities of firms developing to their most efficient size will depend in some measure on the form which it is open to firms to take and upon the possibilities of obtaining adequate finance. The control of modern industry and the possibilities of the exercise of monopoly power are closely bound up with the peculiarities of the structure of the most important form of industrial enterprise—the public limited company. Also, as we shall see later, the rights of different classes of debenture holders and shareholders are directly relevant to any discussion of combinations and amalgamations.

These examples could easily be multiplied. Their force will become apparent in later chapters.

CHAPTER III

The Size of Firms

I. THE OPTIMUM FIRM

IN an ideal world all firms should grow up to the point at which they are making the most effective and economical use of productive resources. That is to say, all firms should expand until they reach their optimum size, i.e. until they are producing those outputs which they produce at a lower average cost than any other output. The fact that other outputs are produced at a higher average cost does not mean, of course, that the firm is not combining its productive resources in the most economical manner *for those outputs*. It merely means that if output is contracted or expanded to the optimum point, certain further economies in the use of productive resources become available to the firm which enable it to produce the optimum output at a lower average cost per unit (i.e. total cost dividend by output) than any other output. Total cost in this connection includes all costs which the production of the output has entailed—not only the direct labour and raw material costs, but also a proper allowance for depreciation of capital equipment, a reasonable rate of profit and all other indirect costs which have to be covered in the long run if the firm is to survive.

Over any short period a community will have at its disposal only a fixed quantity of the factors of production (land, labour, capital and enterprise) available for use in production. Given the total money cost of obtaining the services of these factors, the total output of goods and services produced (aggregated in terms of money) will be at a maximum when all firms are of the optimum size. We must, therefore, consider carefully upon what factors the optimum size of the firm will depend and what forces are likely to impede or facilitate its attainment. The optimum size of firms will vary in different industries¹ where different technical, marketing, and financial conditions are encountered, but in each case its attainment will be essential to maximum efficiency.

¹ And for different firms in the same industry, see p. 41.

Where conditions approximate to those of perfect competition, the size of firms may confidently be expected to approach very nearly to the optimum. This is the sort of result we should expect to get when a large number of firms contribute relatively small amounts to the total output of a more or less standardized commodity. There will be little likelihood of consumers feeling any marked preference for the output of one firm as compared with another and each firm will be able to vary its output (and sales) without perceptibly affecting market price. In effect, each firm will be able to dispose of any output at the prevailing market price. In order to maximize profits each firm will produce that output at which marginal cost is equal to marginal revenue. But under conditions of perfect competition, marginal revenue is equal to average revenue for all outputs and in equilibrium, average revenue must equal average cost. Since marginal cost is equal to average cost only at the lowest point of the average cost curve, each firm will produce that output at which average cost is a minimum.¹

Such conditions are unlikely to be encountered in practice, and since it is impossible to measure the degree of perfection of competition, this is not a very useful approach to our problem. Moreover, although the existence of near-perfect competition involves a presumption that firms are of about the optimum size, the absence of perfect competition does not necessarily mean that firms diverge from their optimum size to any considerable extent. In some industries, technical conditions may determine that for any firm to reach optimum size, it must produce an output which is a considerable part of the total effective demand for the product. A few firms of optimum size will dominate the industry, each firm by variation of its output being able to affect market price and, therefore, endowed with quasi-monopolistic power. It is true that under such circumstances the limited number of producers may, by formal or tacit agreement, enlarge their profit by producing output on less than the optimum scale. That is to say, they may restrict output and raise the price of a product to a degree which more than counterbalances the raising of average costs above the minimum. But the absence of conditions of perfect competition

¹ For a fuller treatment of this line of analysis see J. Robinson, *Economics of Imperfect Competition* (Macmillan, 1936), Chap. 7.

cannot be taken as proof that firms are significantly of less than optimum size.¹

This concept of the optimum size of firms is not satisfactory in other ways. Where competition is imperfect (for example, by reason of the fewness of firms or differentiation of the products of firms in the "industry") each firm can only dispose of additional amounts of output by lowering the selling price. In these circumstances it is clear that firms will not continue to expand output up to the point at which average cost is a minimum. At some point short of this each firm will find that the benefit of further diminution of average cost is counterbalanced by the sacrifice of having to cut prices to dispose of the additional output. Firms will be of less than optimum size.

Where the imperfection of the market is due to differentiation of products, a given output will be produced by a larger number of firms (of less than optimum size) than would have been the case had competition been perfect. But this result may be regarded as reflecting the response of entrepreneurs to the demand of consumers for variety in the product. The presumption is that such a result affords an equal or greater degree of satisfaction to consumers than if a similar quantity of standardized goods had been produced at a lower cost and sold at a lower price. From the point of view of maximizing aggregate satisfaction, therefore, firms which are producing outputs lower than those which they could produce at minimum average cost may be of the ideal size.

This line of argument should not be pushed too far since the so-called demand of consumers for variety may have been induced by advertising, etc., and may not represent what the wishes of consumers would have been if they had not been subjected to "selling pressure." So we shall continue to regard the optimum size of firms as being very roughly given by the point of minimum average cost.

It is not often possible to discover by factual investigation what is the optimum size of a firm in various industries. When the size of firms in an industry is investigated it is often found that some modal type emerges. That is to say, a large proportion of the total number of firms are found to be approximately

¹ Cf. Schumpeter *Capitalism, Socialism and Democracy* (Allen & Unwin, 1934), pp. 100-101.

the same size. In the Ulster Linen Industry, for example, 26 out of a total of 35 spinning firms were found to control between ten thousand and thirty thousand spindles in 1938. In the weaving section 23 out of a total of 53 firms were found to be working between 200 and 400 looms. The existence of such a modal type is often taken as evidence that the optimum firm can be approximately identified with it. The implied assumption appears to be that, making allowance for the fact that some firms will be growing up and others declining, the majority of firms in an industry may be expected to have settled down at round about their optimum size.

There are obvious defects in this line of approach. The optimum size of firms in the same industry may differ from one firm to another. For example, the different firms will not all have access to entrepreneurial ability of the same quality. Nor, in practice, is it to be expected that all firms will industriously seek and arrive at their optimum position. Moreover, concentration on the modal type when we are seeking the optimum firm may lead us badly astray in some cases. In the coal industry, for example, out of a total of 750 firms in 1943, 386 employed less than 250 wage earners, and produced less than 12,000 tons of coal each per annum. No one familiar with the industry would suggest, however, that such firms (responsible for less than 1 per cent of the total output of the industry) conformed to anything like the optimum size of firm for this industry.

It is highly improbable that a well-defined optimum firm is to be found in any industry.¹ The most that could be effected by thorough factual investigation would be to establish in the case of each firm whether or not it had exceeded or fallen short of its optimum size. The most that can be done in a general elementary study of industrial organization is to indicate what factors affect the size of firms in general. Upon the force of these considerations in each particular case the optimum size of the firm will depend.

It is sometimes suggested that technical considerations set

¹ It should be carefully noted that, although under conditions of perfect competition all firms are of optimum size, it does not follow from the theoretical standpoint that the optimum output is the same for all firms in the industry. *Vide Chamberlin, The Theory of Monopolistic Competition* (Harvard University Press, 5th Edition, 1946), p. 22.

fairly narrow limits to the size of firms in most cases. Thus, given the area of its operations, a railway company has to provide itself with a certain technical equipment before it can commence operations, which can only vary within narrow limits. Similarly, the power loom is the indispensable technical unit for textile weaving. It may be true in many cases that technical considerations determine narrowly the size of a plant, and in this sense determine the minimum size of the firm. But a firm may control one or more of these technical units and it is comparatively rare for purely technical considerations to determine the upper limit to the size of the firms.

In the discussion which follows of the factors affecting the size of firms and the relative advantages of large and small firms, it should be borne in mind that unless otherwise stated the assumption is invariably made that firms work to the limit of their capacity. A firm which attains its optimum size on this assumption may fare badly by comparison with less ideally adjusted firms if demand for the product falls away and enforces less than full capacity working.

This is an important consideration which may considerably affect the size of firms in practice. Where an industry is subject to a fluctuating demand for its products, firms may decide not to expand their size to the point at which they could minimize their average cost at full capacity working. For reasons into which we cannot go here, this is particularly likely to be the case in industries producing capital goods. To a lesser degree it is also likely to be true of industries which are normally dependent to a substantial extent upon foreign demand for their products.

Fluctuating demand is less likely to inhibit growth if the capital equipment can be adapted to the production of more than one type of product. It is conceivable that a shipbuilding firm might be able to adapt itself in an emergency to the prefabrication of steel houses, or a cotton spinning firm might adapt itself to the spinning of synthetic fibres. But, if firms are to operate with maximum efficiency in their specialized line of production, too much account cannot be taken of such possibilities of adaptation, and limitation of the size of the firm will probably be decided upon as the best way out of the difficulty.

Factors affecting the size of firms may be conveniently

grouped according to whether they are technical, marketing, financial, or entrepreneurial.¹

2. TECHNICAL FACTORS BEARING ON SIZE

Technical factors most commonly operate in favour of increasing the size of firms, and rarely exercise a limiting influence. An increase in the size of firms enables maximum advantage to be taken of specialization and division of labour. Each unit of labour can be restricted to a single task which can be rapidly learnt and efficiently performed with a minimum amount of such time-wasting movement as would be entailed by the performance of different tasks. The depressing effect of the continued repetition of a single movement (e.g. the turning of a screw) is not the affair of the entrepreneur except in so far as it might affect the ability to concentrate and the efficiency of the worker. Nor is it by any means certain that the effects of extreme specialization of labour on the morale of the worker are as bad as is often alleged. The provision of good working conditions and attention to recreational and welfare activities may exercise a valuable off-setting influence. Also, any increase in mental strain induced by extreme specialization may be compensated by a lessening of physical strain. At any rate there is little evidence to suggest that, from the point of view of the failing reactions of labour, the limits of specialization have been reached.

Large-scale production with considerable specialization of labour is often found to facilitate the splitting off of small operations which can be taken over by a machine specially designed for the purpose. Where manual labour has formerly been employed to stick labels on boxes as they pass along a conveyor belt, this may now be done by machine. In this way division of labour may pave the way for technical advances and a lightening of the burdens of labour.

Only when production is on a sufficiently large scale can the taking-over of small operations by machines be economically justified. A machine for labelling boxes would hardly be justified in a factory producing only a few boxes of goods per day. The cost of the machine is likely to be high, and only if it is

¹ For a fuller discussion see E. A. G. Robinson, *The Structure of Competitive Industry* (Nisbet, 1931), Chapters I-VII.

used intensively so that its cost is spread over many separate operations is the full economy of its use likely to be secured. Only under such conditions is its cost likely to be more than covered by the saving of labour costs which its use entails.

The rate of technical advance may be speeded up by large-scale production. Highly specialized capital equipment is not only more intensively used but it is more quickly depreciated, and more quickly replaced by new and improved technical devices. This may be one of the reasons for the superior productivity of industry in the U.S.A. Firms are more commonly organized for large-scale production there than in this country, and it is very probable that less obsolescent capital equipment is to be found.

Although it is not, perhaps, a strictly technical consideration, some mention should be made of improved methods of organizing production which become available to firms after they have grown beyond a certain point. The introduction of the assembly-line technique in the motor-car industry is an example. This may be regarded as a particular example of labour specialization, but its significance goes deeper. It often involves considerable specialization of capital and a high degree of standardization in the finished product much more than it involves further specialization of labour. The recent introduction of what is fundamentally the same technique in ship-building and house-building gives point to this. The labour of the bricklayer in building a house of the traditional type is probably more specialized than that of his more modern counterpart engaged in the erection of the shell of a prefabricated house.

The so-called economy of increased dimensions often confers technical advantages on the large firm. The capacity of a blast-furnace or a gas-holder increases more than in proportion to the weight of material which has gone into its production. There may, of course, be technical limits to the extent to which such economies can be reaped. There is a limit, for example, to the weight of ore which can be sustained by the coke in a blast furnace. A double decker bus is much less than twice as costly to buy and run as a single-decker bus, but will carry almost double the number of passengers. But the addition of a third and fourth deck would make the bus dangerously top-heavy.

and its use would entail the raising of the majority of bridges under which roads run.

Further technical economies may be reaped by the large firm through the linking of processes. In the steel industry, for example, a firm may so organize itself that the pig-iron, raw steel and semi-finished steel product is produced in one continuous operation. Apart from obvious savings in transport costs, considerable internal technical economies are secured, for example, by the avoidance of the necessity for reheating the steel billets before they are rolled. It is true that the linking of processes may involve difficult problems of balance. It may be very difficult to secure a proper adjustment of the capacity of the blast-furnaces, steel-furnaces, and rolling-mills, so that each unit is of the most economic size and is yet worked continuously to full capacity.¹ Diseconomies induced by lack of balance may go far to counterbalance the economy of linked processes.

Examples of a somewhat similar kind can be found in other industries. Small coal which has a relatively low value and is costly to transport, may conveniently be converted into coke and other coal by-products on the colliery premises, the waste heat from the ovens being used to raise steam for general colliery purposes and the coal gas being used to light and heat neighbouring villages. In this way the usually distinct processes of coal-mining and gas and coke manufacture are linked together in a single continuous operation. Once again it will be noted that such technical economies are only available to a large firm which produces a sufficient output of coal to provide sufficient small coal to keep a modern battery of coke ovens working to full capacity. It sometimes happens that a small firm is compelled to dump small quantities of waste material which are too bulky in proportion to value to bear the cost of transport. A large firm may produce sufficient waste material to turn it to good account. A large firm producing furniture may be able to develop a flourishing side-line by manufacturing fire-lighters, using as raw material wood shavings which would otherwise be valueless to it.

¹ Where various specialized processes with different optimum capacities are linked, the (technical) optimum output of the firm will be the L.C.M. of these optimum capacities. The firm may, therefore, expand to a point far in advance of that indicated by the optimum output for any one of the separate processes.

It will be seen that technical considerations nearly always place a premium on large-scale production. Where the minimum technical unit is large (as in the case of a blast-furnace) the small firm may be completely excluded. But where the minimum technical unit is small (e.g. the single power loom in cotton weaving) the small firm may continue to flourish by obtaining access to some of the technical economies of scale through vertical disintegration. Vertical disintegration is said to take place where some specialized operation which can most economically be carried out on a large scale is split off from the major productive operation of which it forms part, and is carried on by a separate firm.¹ The manufacture of wireless valves may be split off from the manufacture of wireless sets, manufacturers of wireless sets finding it more economical to purchase valves from specialist firms rather than to manufacture their own. In the cotton industry, finishing (i.e. bleaching, dyeing, and printing) is normally carried on by specialized firms which work on commission for manufacturers or merchants. The small weaving firm can, therefore, get its finishing done at a cost comparable with that of a large firm which has its own finishing establishment.

3. MARKETING FACTORS

Marketing factors also work to the advantage of the large firm in many important respects. The importance of skilled buying of raw materials to economical production can hardly be exaggerated. The large firm can afford to engage the full-time services of skilled buyers who have an intimate technical knowledge of the material handled by the firm in question, and are familiar with likely sources of supply. Skilled buyers are unlikely to be deceived as to the quality of the goods they buy and are unlikely to miss opportunities for snapping up bargains. Being employed by large firms they can buy in bulk and, therefore, more cheaply than firms who are forced to buy in small lots. The size of the order puts the buyer in a favourable position to exploit the seller who cannot afford to lose a large order, and the transport of a large consignment of raw materials to the point of manufacture

¹ The policy of the Cadbury firm in this respect is well illustrated in *Industrial Record* (Cadbury Bros., 1945), p. 22 *et seq.*

can be effected much more cheaply than a small consignment. It is quite usual to be informed when investigating the conditions of industrial efficiency that the profitability of the firm depends more on skill in buying than on a high order of efficiency in the factory. This is most often the case where conditions of manufacture are fairly standardized and the cost of raw materials is a considerable item in the price of the finished product.

Once again, however, the advantages of the large firm may be offset to a considerable extent by vertical disintegration. This would be the case where the raw material is traded in on a large scale by specialized merchants on an organized produce exchange. Before the 1939-45 war the small firm could buy raw cotton as favourably as the large by taking advantage of the facilities provided by the Liverpool Cotton Exchange. But such facilities are only likely to exist where the quantity of raw material needed by an industry is large and is suitable for standardization and grading.

On the selling side also, the economies of scale are considerable. An efficient selling organization is expensive but its capacity may be enormous, so that it operates most economically on a large turnover. Travellers and agents can handle large orders as conveniently as small, and a large number of orders can be handled with little more expense than a small number. The firm will, therefore, have every incentive to expand production even if, up to a point, the disposal of the additional output necessitates lowering prices. This refers specifically to the selling organization itself. Other selling expenses may increase more sharply with expansion of output and so confer fewer advantages on the large firm. As the firm grows, advertising may have to be done on a national scale and become correspondingly more expensive.

A large number of firms may co-operate to reduce selling costs by forming a co-operative selling organization. This would constitute a form of vertical disintegration on the selling side. Such organizations, however, are uncommon in industry proper except where the motive inspiring their formation is the desire to exert monopolistic control over the market rather than to reduce selling costs. There is no question that considerable economies could be reaped by the maintenance

of a single selling organization in place of each firm maintaining its own. But the small firms who would be required to co-operate find it difficult to reassure themselves that they would not lose by such an experiment. Each firm is producing a more or less differentiated product which encounters vigorous competition from the products of other firms. The sales of any single firm's product can only be increased to any considerable extent by displacing the products of rival firms in the market. Each firm would require rigid assurances that the sales of its products would be protected by the selling organization and this could only be met by each firm receiving a fixed sales quota. No firm producing at diminishing costs would for long remain content with a relatively fixed sales allocation. It is doubtful if a co-operative selling organization would for long survive these strains and stresses. If the firms, though nominally independent, were subject to a degree of common control or if they had some purpose in view other than the reduction of individual selling costs, the case might be different. One may, nevertheless, find examples of such sales associations though they are generally followed by combination and the development of monopolistic practices. The J. & P. Coats sewing thread combine was preceded by a sales association of independent firms. Also, firms may co-operate on the selling side by methods which fall short of this. They may attempt to reduce the wastes of competitive advertisement by combining to advertise the product as a whole. Thus, for example, the Irish Linen Guild advertises the advantages of Irish linen as distinct from the advantages of non-Irish linen or other fabrics. Of course, no attempt is made to push the products of individual firms.

It does not necessarily follow that firms must do their own selling either independently or in co-operation with other firms. In the cotton industry merchanting is commonly split off from manufacturing entirely, and is in the hands of independent merchanting firms. But the possibilities of playing off one manufacturer against another are so great that this remains the exception rather than the rule for industry generally. Where quality, variety, and trade names are important, there are obvious advantages to be derived by each firm from developing its own selling organization.

The economies of large-scale buying and selling organizations are such that they frequently provide an incentive for the firm to expand beyond the technical optimum. But the influence of the marketing factor may easily be exaggerated. For many types of product (e.g. locomotives or aeroplanes) elaborate selling arrangements are inappropriate. Consumers' requirements are relatively limited and widely spread over time, and the maintenance of close personal contacts between sellers and buyers, high pressure competitive advertisement, etc., would be unjustified.

4. FINANCIAL FACTORS

When we turn to consider financial factors affecting the size of firms we still find that the balance of advantage lies with the large firm. In Chapter II we have already indicated some of the reasons why this is so. In the raising of long-term capital a large public issue is relatively cheaper than a small one. In fact, the cost of a public issue is often prohibitive to the small firm.¹ Also in the large business there are generally greater possibilities of making one part of the business temporarily finance another. For example, in time of difficulty or period of new development, the margarine side of a business may be supported by the soap side of the business. It has often been alleged that coal-mining concerns have been supported financially during depression by the distributive side of the firms' activities. Moreover, the large firm will require proportionately smaller reserves to cover contingencies than the small firm. Thus, for example, the risk of bad debts can be more accurately estimated and is proportionately reduced the greater the number of customers.

Large firms frequently find it easier to raise working capital from the banks for various reasons. Size gives an impression of solidity and security, and once assistance has been given the bank is half committed to further support. If the firm is small the bank's stake in it will be more modest, and the consequences to the bank of a refusal of further advances less serious. The ramifications of a large firm may be such that its failure would seriously affect other interests of the

¹ Some interesting figures illustrating the higher cost of borrowing or raising small amounts of capital in the U.S.A. are quoted by Steindl, *Small and Big Business* (Blackwell, 1946), p. 20.

banks. Also, the Government cannot always remain indifferent to the possible failure of a large firm providing a large volume of employment and may put pressure on financial institutions to go to its assistance. Alternatively, the Government may provide such assistance on favourable terms.

We have already referred to the difficulties encountered by new small firms in obtaining adequate finance and to the fact that after their establishment they may be unable to obtain further financial assistance as adequately and as cheaply as the large firm. From this point of view the financial factor may be regarded as inhibiting the growth of firms to their optimum size. But the advantages of the large firm on the financial side may nevertheless provide an incentive to growth. Small firms often die in spite of their technical efficiency and fair long-term prospects, because they cannot be financed over the difficult developing period. Large firms rarely die—when in difficulties they generally proceed from one financial reconstruction to another.

5. ENTREPRENEURIAL FACTORS

The effect of the vitally important entrepreneurial factor on the size of firms is more difficult to assess. From some points of view the advantage in this respect also lies with the large firm, which can afford to buy in the open market the most able entrepreneurial ability available. Although it may be expensive first-rate managerial ability is always an economy, particularly to the large firm which spreads the cost over a large output. The small firm is often unable to compete effectively with the large firm in this field. The large impersonal public company or corporation is more likely to eject unsatisfactory executives and to recruit fresh blood than the small firm with its more pronounced family element. But old-established family businesses have nevertheless often successfully recruited able men from outside, the family retiring from active conduct of the business although the family name and ownership interest is maintained. Also, it needs to be remembered that the economies of large firms in this respect are often offset to some extent by their maintenance of a large board of highly paid directors who contribute little by way of entrepreneurial services.

Apart from its greater command of business ability the advantage of the large firm resides in its power to specialize the management function. The entrepreneur in the small firm will often be responsible for detailed supervision of buying, sales promotion, designing the product, and technical supervision of production. It is doubtful whether one man can acquire sufficient knowledge to perform efficiently all these functions which in the large firm would be carried out by specialist executives, subject only to very general supervision from above. But this task of supervision and co-ordination of the work of specialists is no easy burden to carry. As the firm grows it may become more and more difficult to keep all the threads in one hand. The firm may become top-heavy and red tape may inhibit enterprise and efficiency. The supply of Fords and Nuffields is limited and this will set limits to the growth of firms. The growth of specialism in management may be the source of considerable economies, but it does not solve the entrepreneurial problem. The policies of specialists need to be co-ordinated and reconciled to some over-all purpose. There must always be a high degree of centralized control and a very able directing brain must be found to exercise it.

It seems probable that insufficiency of first-rate entrepreneurial ability (in the sense of persons capable of directing the affairs of large concerns) is an important factor limiting the growth of firms. Only where it is available to the large firm can we be confident that the small firm is at a disadvantage in this respect. Many firms grow for other reasons, despite the emergence of diseconomies on the managerial side. Having regard to the more restricted span of control, entrepreneurship in the small firm may be highly efficient. Nowadays, knowledge of new management methods is widely dispersed and is more easily available to small firms. Nor should the possibilities of vertical disintegration in this sphere be under-rated. Expert advice can often be secured by the small firm on payment of a consultation fee or on a retainer basis.

6. RECONCILIATION OF THESE FACTORS

The size of firms will generally be determined by a compromise between the optima set by managerial, technical, marketing, and financial factors. Thus, for example, a firm

may continue to expand beyond its technical optimum so long as the reduction of selling costs offsets the tendency of technical costs to rise. A completely successful compromise would mean that the firm would increase in size until average total costs were a minimum. But such a compromise may not be possible. To reach the selling optimum may require an addition of x units to annual output—this, in theory, involving economies sufficient to offset the rise in technical costs. But it may not be technically possible to increase output by x units. Any further expansion of output may necessitate the laying down of an additional plant which will involve increasing output by $5x$. Such an expansion may take the firm well beyond the point at which it is working at minimum average cost.

Steps may be taken to facilitate further growth by delaying the emergence of diseconomies in one respect in order to reach a higher optimum in respect of another factor. Where the technical optimum exceeds the optima in other directions, plants may be duplicated under separate managements. But this is unlikely to arise in practice, especially where technical economies are largely derived by linking of processes or by increased dimensions of plant. "Splitting off" may so adversely affect low-cost technical development that it would not be worth while.

Where, as is more likely, the point of maximum advantage on the selling side exceeds that of the technical side, much may be achieved by increasing the specialization of the technical processes and by taking advantage of vertical disintegration. The firm would then be able to dispose of a larger output whilst keeping technical costs lower than they would be if the firm remained responsible for the entire process of production. If management is the limiting factor the emergence of diseconomies may be delayed by decentralization, but, as we have indicated above, it may not be possible to take this process very far.

7. EXTERNAL ECONOMIES

So far we have considered only factors internal to the firm as affecting its size.¹ But external economies may also exert considerable influence. The main difference between external

¹ Except in so far as vertical disintegration may be considered as an external factor.

and internal factors affecting the size of a firm is that the force of the latter varies from firm to firm, whereas the former will affect the size of all firms in the industry or group to approximately the same extent. External economies arise partly out of the development of specialized subsidiary activities. Thus, for example, the existence of the cotton industry has promoted the growth of the textile machinery industry in Lancashire with the result that the technical needs of the industry are better provided for than they would otherwise be. Similarly, the growth of specialized port and shipping facilities has improved access to foreign markets and so placed a premium on the further growth of individual firms. The growth of the iron and steel industry has promoted the growth of firms specializing in the collection of scrap. Supplies of scrap become more adequate and are cheapened, with the result that the costs of iron and steel firms are reduced and their technical optima raised.

It will be noted that an industry is likely to have to grow up to a certain point before external economies become important. After this point has been reached external economies may provide the most important incentives to further growth. An industry may grow under the impact of external economies until the introduction of entirely new methods of production becomes possible to firms, with a considerable lowering of costs and pushing forward of the optimum scale of output. Thus one industry in growing promotes the growth of others and the optimum size of firms in each industry is increased. A large iron and steel industry may provide sufficient basic slag to promote a considerable growth of cement-making firms which are thereby enabled to exploit the possibilities of basic cement. The development of the sheet and tinplate industry may provide the basis for the growth of the motor-car industry to the point at which the introduction of the assembly-line technique becomes possible. The consequent expansion in the demand for sheet steel from the motor-car industry may facilitate the introduction of the modern strip mill technique in the sheet and tinplate industries and so on. In each case the introduction of new techniques is accompanied by the growth, and possibly a diminution in the total number, of individual firms.

8. THE SIZE OF FIRMS IN PRACTICE

In the light of the above discussion it is interesting to note to what extent the large firm predominates in practice. The Census of Production which is taken periodically in Great Britain and in Northern Ireland covers what is normally understood by the word "industry."¹ That is to say, it excludes purely personal service occupations (such as domestic service, medicine, dentistry, teaching, etc.), distribution, finance and agriculture. In the 1935 Census, returns were made by some 53,217 firms (very small firms employing less than ten persons being excluded) employing in the aggregate 7,203,057 persons. Despite the exclusion of very small firms, 41,215 firms employed less than 100 persons and were together responsible for about one-fifth of the total volume of employment. Firms that were employing less than 500 persons (50,937) were responsible for nearly one-half of the total volume of employment. From these figures, it will be seen that, despite the fact that a relatively small number (2280) of comparatively large firms (employing over 500 persons each) were responsible for over one-half of the total volume of employment, the small firm was by no means a negligible factor in industry at the time of the last Census—and the same is true to-day.

In the preceding paragraph the word "firm" covers any business trading under a single name. If, however, we consider the size of "undertakings" (an undertaking being one or more firms subject to common control) the preponderance of the large unit becomes more apparent. In 1935 some 1959 separate undertakings, each employing over 500 persons, in "Census of Production industries" employed an aggregate of nearly 4,000,000 persons. Some 135 of these undertakings (each employing over 5000 persons) employed nearly 1,770,000 persons. By contrast there were only 101 "firms" employing over 5000 persons, which provided an aggregate employment of just over 1,000,000 persons. It will be seen that the effect of considering "undertakings" rather than "firms" is to emphasize the importance of large as compared with medium-sized concerns rather than to detract from the general impression

¹ The Census of Production is discussed in greater detail in Chapter VIII, where some of the factual illustrations given in this and the following chapters are further expanded.

that the small firm remains a considerable factor in our industrial economy.¹

The main criterion of control employed 'in' identifying undertakings for the purpose of the above statistics was ownership of half the capital (or voting power) in the subsidiary company by the parent company. In practice, control may be secured by possession of much less than 50 per cent of the voting capital or by such devices as interlocking directorates. If it had been possible to include all firms which were subject to common control, it is probable that the above figures relating to small firms and undertakings would not have been much affected but that the importance of large concerns would have been further emphasized at the expense of the medium sized.

The dominance of the large undertaking would appear to be less marked in the United Kingdom than in the U.S.A. The data prepared by Mr. Leak and Mr. Maizels² suggest that in 1935 the 200 largest industrial undertakings provided less than 30 per cent of the aggregate employment in Census of Production industries. In 1935 the 200 largest non-financial corporations in the U.S.A. controlled from 46 per cent to 51 per cent of all industrial wealth (exclusive of agriculture).³ These figures are not, of course, strictly comparable. Large corporations in the U.S.A. (as in this country) are to be mainly found in transportation, public utilities, and manufacturing industry. All of these are heavily capitalized, i.e. they reveal a high proportion of capital per person employed. One would therefore expect the U.S.A. figure, based on the proportion of industrial wealth controlled, to be higher than the British figure, based on proportion of aggregate employment given. On the other hand the U.S.A. figures (unlike the British figures) cover trade and service occupations in which comparatively small firms tend to predominate. This tends to raise the British figure by comparison with the U.S.A. figure.

A better basis for comparison is perhaps given by the following. The 200 largest United Kingdom undertakings accounted

¹ The figures quoted in this and the preceding paragraph have been abstracted from tables prepared by H. Leak and A. Maizels. Vide *The Structure of British Industry* (Royal Statistical Society, 1945). This pamphlet is discussed at greater length in Chapter VIII.

² *Ibid.*

³ R. A. Gordon, *ibid.*, page 23.

for about 30 per cent of the total gross output of all Census of Production industries in 1935. In the U.S.A. the 200 largest non-financial corporations accounted in 1935 for roughly the same proportion of the total gross receipts of non-financial corporations.¹ These figures definitely suggest the greater power and importance of the large firm in the U.S.A., since the American figure is based on a wider definition of "industry" as noted in the previous paragraph.²

These comparisons are not only interesting in themselves but also illustrate some of the difficulties of finding suitable units in which to measure the size of firms, and on which to base estimates of the importance of large-scale business activity. Estimates based on the volume of employment given tend to favour the small firm where a high proportion of labour to capital employed is most frequently found. Estimates based on the value of assets controlled will favour the large firm. Comparison based on gross receipts or gross output are probably more satisfactory. They will favour firms working on expensive raw materials but should produce little distortion as between large and small firms. On balance one would expect such comparisons to emphasize the proportionate importance of small firms. Statistics based on authorized, issued, or called-up capital are of little use in this connection for reasons previously given.

It is equally difficult to arrive at any sound conclusion as to the relative merits of small and large firms by consideration of their results in practice. It is almost impossible to isolate what is due to the size factor alone. A large firm in the development stage may show losses due to the fact that output is low whilst heavy development costs are still being incurred. A small firm may be in a position to exploit a particularly favourable situation, but the fact that it is making high profits does not necessarily mean that production could not be more efficiently organized and profits further increased if the firm was larger. Where conditions of production are variable, comparisons are even more difficult to make. A small and inefficient firm in a developing and highly productive coal-field may make higher profits than a large

¹ R. A. Gordon, *ibid.*, page 22.

² But it excludes non-corporate receipts which are not included in the figures for non-financial corporations.

and highly efficient firm in an older and less productive coal-field. Also, it is not easy to arrive at satisfactory and comparable figures of profits and, however arrived at, they afford no reliable evidence of economic efficiency. No comprehensive data bearing on this issue are available for this country. For the U.S.A., available statistics show that losses are more frequent and more serious and that mortality is higher in the case of the small business.¹ But the evidence is not conclusive as demonstrating the economic inferiority of the small firm.

9. THE SURVIVAL OF THE SMALL FIRM

In the light of the preceding analysis, it is rather surprising to find that small firms still constitute such an important element in modern industry. It is important to consider why this is the case.

Many small firms are the creation of individuals whose interest in promoting expansion may be limited. From every point of view—technological, marketing, financial, and entrepreneurial—further growth may be possible and profitable, but human inertia may overcome economic incentive. The proprietor may fear the loss of his freedom if expansion takes place. The business as it stands may afford him a comfortable livelihood and adequate leisure. Growth of the business may entail more work and worry than is compensated for by additional profit. Economists assume that entrepreneurs will seek to maximize their profits and there is no question that this is the most reasonable assumption on which to base their theories. But what we have called "inertia" (which may itself be a form of economic calculation) undoubtedly plays an important part in the real world of business affairs.

But there are other considerations which favour the small firm. Where quality, variety, and attention to detail are important, the small firm often has the advantage over its larger competitor. These may be important factors even in industries where the advantages of large-scale working are most apparent. Professor Allen has pointed out that in the finishing end of the steel industry where the product is highly

¹ *Vide* W. L. Crum, *Corporate Size and Earning Power*. See also Steindl, *ibid.*, pages 6 and 40 *et seq.*

specialized the small firm can often work to advantage.¹ In the weaving branch of the cotton industry, variety and quality considerations minimize the advantages of the large firm. Small firms often flourish where labour is unorganized or in small towns where alternative employment is difficult to find. Labour can, therefore, be obtained cheaply and pressure can be successfully exerted on wage rates in difficult times. Also, where an industry is dominated by a few large firms, the continued existence of small firms may be tolerated in that they do not threaten the monopolistic position of the large firms. They provide superficial evidence that monopoly does not exist, and afford some guarantee against the emergence of new competition. Finally, harmonious relations between management and labour may be a source of important economies to the small firm. The importance of this factor is recognized by many of their larger rivals who spend large sums on labour management and welfare schemes in an effort to secure the willing co-operation of contented employees.

We have already called attention to the importance of market imperfections in this connection. Small firms are often protected within limits by the goodwill of consumers, transport costs, etc., and the large firm may find it impossible to squeeze them out of existence. Small firms may depend for their existence upon the possession of more or less assured markets. The small unit also frequently displays greater flexibility than the large unit—its overhead costs are lighter and, therefore it is less vulnerable to depression, the entrepreneur's remuneration can be varied within wide limits, variation of product to meet changes of demand is more possible, mistakes in manufacture or the buying of raw material are less serious, and so on.

Market limitations of one kind or another provide the most important explanation of the continued survival of the small firm. In some industries the main productive operations are necessarily dispersed over a very wide area, as, for example,

¹ *British Industries and their Organization* (Longmans, 2nd Edition, 1935), page 132, E-H. In general, it is true to say that the large fully-integrated hot strip mill can produce tinplate of a higher quality and at a much lower cost than the small old-fashioned mills producing tinplate from bar. But examples of the latter can still be found in fairly flourishing condition, which produce some highly specialized form of tinplate, e.g. extremely thin tinplate for the production of which the strip mills are not well adapted.

in the building industry. Technical economies of scale frequently depend on geographical concentration of the processes of production, and in the building industry efforts have been made to secure such economies by prefabrication. But final assembly must take place on the site and transport costs may counterbalance technical economies so that geographically scattered small firms may operate more economically than large. It is not surprising, therefore, that of some 73,000 firms engaged in building and civil engineering early in 1945, 32,000 were one-man firms employing no operatives and a further 16,500 employed only one or two operatives.¹ The average number of persons employed per firm in the industry was approximately 13. Similar considerations hold good of brick and fireclay manufacture. Both the necessary raw materials and the demand for the product are widely scattered whilst transport costs are heavy. Net output per man rises steeply with increases in the size of the establishment, but out of 1890 establishments² operating in 1935, nearly 90 per cent employed less than 100 persons and were responsible for over 50 per cent of the aggregate employment provided by the industry.³

Account must also be taken of the limits to the growth of large firms. Some have already been indicated or hinted at in passing. First-rate entrepreneurial ability is rare, so that the managerial optimum may frequently be low in practice. Risks of fluctuation in demand are particularly serious for the large firm which normally carries heavy overhead expenses. The unit fixed costs of large firms rise steeply in depression and they may be severely undercut by the smaller firms. More serious, however, are the market imperfections which often face the

¹ *Economist*, 9th March, 1946, page 382. The majority of such firms would, of course, be engaged mainly on jobbing and repair work rather than new constructional work.

² In this industry the great majority of firms operate single establishments (works). *Vide First Report of the Committee on the Brick Industry, 1942*, page 5.

³ A more striking example, perhaps, is provided by the gas industry. According to the Heyworth Committee (1945 Cmd. 6699, page 17) the efficiency of gas undertakings is very largely a function of size. Yet about 60 per cent of gas undertakings in 1944 could be classified as very small. Some of these were uneconomic units artificially protected by statutory monopoly powers. But many small units served areas which were isolated and of low demand beyond the transmission range of large undertakings, and their survival can be fully justified on economic grounds.

large firm. It may have every incentive to grow in that ever larger outputs can be produced at steadily decreasing average production costs. But the increased output may only be marketed at the expense of lower prices, expensive selling and advertising campaigns, etc. A point may quite soon be reached where limitation of the market makes further growth uneconomical.

Growth of firms may be restricted in other ways. A small firm may clearly see and strive towards a higher optimum. During the development period output may actually decline whilst costs rise steeply. Such temporary losses will probably be budgeted for, but they may be under-estimated and prove to be greater than the firm can bear. An adverse cyclical fluctuation of demand may occur during the development phase which may not have been allowed for when the development plan was drawn up. Many small firms which aspire to be large firms are cut off in their youth.¹

¹ Despite the heavy mortality among small firms, the prestige attached to "being in business on one's own" ensures that sufficient new small firms are established to fill the ranks. This is particularly so where entry is relatively easy, where there is no high premium on specialized knowledge, and where market imperfections are pronounced—as in some branches of retail trade. Risks are heavy, but large numbers of potential entrepreneurs are always ready to take a chance. As we have seen, opportunities for small-scale enterprise vary from one industry to another. The expansion in recent years of "small-firm industries" partly explains the persistence of large numbers of small firms.

CHAPTER IV

The Development of Large-scale Organization

I. FACTORS PROMOTING AMALGAMATION

IN the previous chapter considerable emphasis was placed on the advantages of the large firm. There can be little doubt that, despite the continued importance of small firms, the average size of firms is steadily increasing.

Limitation and imperfection of the market were found to be the chief factors inhibiting the development of large-scale organization. Thus, for example, transport costs limit the market area which can be exploited by the large firm. Also, for any given market a point will be reached where demand can only be stimulated further by price cuts and heavy selling expenses which will more than offset the reduction of production costs resulting from further expansion of output.

The effects of market limitation may be avoided to some extent if firms grow by a process of combination with other firms, and this is what most frequently happens in practice. The firm which is absorbed contributes not only the technical equipment necessary if economics of large-scale working are to be reaped, but also market connections and consumers' goodwill. The absorbed firm cannot, strictly speaking, transfer its customers to the combined undertaking—they remain free to purchase where they like. But in practice it is highly probable that absorbed firms will pass on to the combined concern that share in the market for the product which it formerly held as an independent firm.

It is difficult to disentangle the major factors promoting amalgamations from those which we have already noted as promoting the growth of firms in general. In some cases amalgamation results only from a desire to reap economies of scale plus the necessity to ensure a market for the additional output as we have indicated above.¹ But generally there is much more to the matter than this.

¹ For example, technical economies of scale may be bound up with possibilities of combination. In the manufacture of finished and semi-finished steel

The revolution in transport which has taken place during the past few decades has made possible, particularly in the case of raw materials, the exploitation of much wider markets than was formerly possible. The intensive working of limited areas of supply has been made possible, and this could best be achieved by very large firms which might, in some cases, go so far as to organize their own means of transport. The large firms would, in most cases, proceed to develop by steady absorption of small firms which, scattered around the limited area of supply, existed mainly for supplying more or less limited local markets. The squeezing out of the small firms would be necessary lest they undermine the position of the large firm in local markets, and also because they might control parts of the area of supply which were vital to the large concern.

The development of joint-stock enterprise with limited liability has also enormously facilitated the combination movement. The control of other firms could be secured by purchase of more than 50 per cent of the voting capital—even less than this would suffice if, as is usually the case, the holdings of the voting capital were widely dispersed amongst members of the public. The cost of combination to the absorbing undertaking would, therefore, be much lessened, and it would in return obtain most of the advantages of outright ownership of the absorbed firm. Alternatively, given the consent of the firm which is to be absorbed, the absorbing undertaking may pay for the assets of the former with its own securities. The ease with which firms may be combined with a limited or negligible expenditure of cash has undoubtedly provided a considerable stimulus to the amalgamation movement.

A more important factor which frequently motivates combination is the possibility of exploiting monopolistic control of the market.¹ Any firm which grows will place itself in a stronger position to affect the market price at which it disposes of its products. But a firm which grows by absorbing its competitors is in less danger of having its position undermined

products, a complete set of rolls will be necessary so that sections of various shapes and sizes may be rolled. In a combined undertaking, each rolling-mill may specialize and keep only a limited stock of rolls for this purpose. A single firm developing on its own without combination could hardly hope to command a market wide enough to permit such specialization.

¹ Fuller consideration of this is held over until Chapter V.

by other firms when it uses its position to reap monopoly profits by restricting output and raising prices. Any firms which are left outside will "cash in" by marketing as much as they can at the higher (or a slightly lower) price, and if their influence is sufficient the price will be brought down by their increased sales. Moreover, any strong monopolistic position generally depends on the collusive action of a number of firms. Combination automatically reduces the number of firms and so increases the possibility of collusion. This possibility exists even when only one large combined undertaking has been built up and the number of firms remains considerable. It is not uncommon for such undertakings to assume "leadership" functions. It may set the market price to which other firms, by tacit or formal agreement, will adhere. Or it may conduct propaganda in favour of price control, using its considerable prestige to bring together its smaller rivals with a view to agreement on monopoly practices.

It is sometimes argued that tariffs promote combination of firms. It is suggested that protection of the home market against foreign competition is likely to bring producers together to exploit possibilities which would not exist if foreign producers had free access to the market. But this factor may not always be relied on to work in this way. Absence of tariffs and exposure to competition may promote combination of firms so that the interests of home producers in the domestic market may be better protected, and strongly organized foreign groups negotiated with on terms of equality.¹

Pressure on the part of the State may produce amalgamations which might otherwise not take place. The formation of the four main railway companies in Great Britain illustrated this. Such cases are likely to occur where the State is convinced that important working economies can be realized by concentration and that (because of personal rivalries or other reasons) such concentration is not likely to come about unless there is some degree of compulsion. The Coal Mines Reorganization Commission was set up by the Coal Mines Act (1930) with the intention that it should enforce the further concentration of coal-mining undertakings, and the Heyworth Committee on the gas industry (1945) recommended that gas undertakings

¹ *Vide* Marquand, *ibid.*, page 10.

should be compulsorily combined on a regional basis. But the State is unlikely to exert such pressure unless it is convinced that the competition of numerous small firms is wasteful, that the economies of larger-scale working are very considerable, that the industry concerned is one of key importance, and that there is little danger of monopolistic exploitation of consumers by the combined undertakings. In each of the cases noted above, monopoly powers had already been granted to the industry by the State, which had erected what it considered to be effective safeguards against abuse.

Occasionally the personal factor is of importance in promoting combinations. The comparative ease with which units may be brought together and the desire of some financier or industrialist to extend the limits of his power explains many fusions which cannot be satisfactorily explained on purely economic grounds. The prestige and political dividends brought in by a position at the head of some huge combination may be more desired by some men than financial returns.

Combination is generally more marked in heavily capitalized industries than in others. These industries are often engaged mainly in the production of investment goods where fluctuations of demand are most severe. Overhead expenses are extremely heavy and, in times of declining demand, prices are forced down by competition towards the level of prime costs. Losses are likely to be heavy in view of the fact that prime costs in heavily capitalized industries are much less than total costs. Combination, which in this connection has been called a "revulsion against risk," reduces these possibilities. Small firms which frequently constitute the weakest sellers on a falling market are absorbed into larger units which will probably come easily and quickly to agreement with each other on output and price control. Also, declining demand is often met more easily by a large combined undertaking which can shut down completely certain units and work the remainder to full capacity.

It may be argued that, by restricting competition on a declining market, amalgamation impedes the rapid and efficient adjustment of industry to changed market conditions. This may be so if the decline in demand is likely to be permanent. But with cyclical fluctuations in demand the closed units

can be brought back into production when demand revives. If competition had been given free play the firm owning these workable capital assets might have been forced into liquidation and the assets scrapped. Also, in so far as large combinations are capable of supporting prices during a depression, they may impart a valuable stabilizing influence to the economy as a whole.

Nor is it by any means certain that competition works as efficiently and rapidly as is often supposed. Intensive price competition may force certain firms into liquidation, but their assets may be bought up at a very low valuation and brought back into production so that the capacity of the industry is not diminished. The competitive struggle goes on and the firms operating these low-valued capital assets can frequently sell more cheaply than their more technically efficient rivals. If the struggle is prolonged sufficiently, capital values throughout the industry will be completely undermined, some firms together with their capital assets will go out of existence altogether and the capacity of the industry will have been adjusted to the new situation. But the victors may have suffered almost to an equal degree with the vanquished, and it is not certain that the public interest will have been well served. New investment in the industry will have been brought to a standstill and the remaining capital in the industry may have become obsolescent. The potentially efficient firms may not have survived. An old conservatively financed but technically inefficient firm may have survived the storm by living on its reserves. A more progressive firm already committed to extensive new development work may have been "caught short" and eliminated by the competitive struggle.

Firms may combine in order to exploit jointly some new technique which if exploited by one would involve a threat to the other. It might involve considerable lowering of costs and the additional output might drive the other firm (or firms) out of the market. If both firms adopted the new technique the consequences of over-supplying the market might be disastrous to both. Combination, the obvious way out of the difficulty, permits the pooling of financial resources in order to finance the new development work. Also an appeal to the banks or to the public for additional capital would

be more favourably received if future possibilities of severe price competition were eliminated by combination of the rivals.

Many amalgamations are inspired chiefly by financial interests which are little concerned with whether or not an economic case can be made out. The English Steel Corporation, Lancashire Steel Corporation, and the Lancashire Cotton Corporation were mainly the result of pressure by bank creditors. The motives of the banks in such cases are somewhat obscure, but the protection of capital by restriction of competition was probably not absent from their minds. The important point is that such "bankers' combinations" are rarely inspired by a conviction (supported by a thorough-going investigation of the facts) that costs are likely to be lowered thereby. It follows that the merits of amalgamation and large-scale production in general are not always reliably assessed by reference to the results achieved. This is even more evident where amalgamations are motivated solely by a company promoter's conviction that big profits can be realized for himself from their formation.¹

2. VERTICAL AND HORIZONTAL COMBINATION

Combinations are generally classified as vertical or horizontal. Vertical combination is an amalgamation of firms engaged at different stages in the manufacture of the same product. Thus, for example, a steel firm may amalgamate with a coal-mining undertaking or with a shipbuilding firm, or a cotton weaving firm with a cotton spinning firm, etc. Vertical combination may extend backwards to the source of the raw materials in their original state or as far forward as the retail selling outlet of the finished product. Horizontal combination takes place between firms which are engaged at the same stage of production of some commodity, as, for example, when one shipbuilding firm amalgamates with another or when two chocolate manufacturing firms combine. The form which amalgamation takes depends on the motives affecting and the circumstances surrounding it. The possibility of securing important economies of scale may in either case be a relevant consideration, but this need not be discussed further.

¹ Financial interests were active during the boom which followed the 1914-18 war in promoting many amalgamations which later came to grief.

Vertical combination is generally motivated by strategic considerations, e.g. to ensure adequate supplies of raw material or access to markets. In connection with the former it may be important to secure, not only adequate supplies, but also supplies of the proper quality at a reasonable price. Where there is some danger of raw material supplies becoming subject to monopolistic control, it is usual for producers at succeeding stages of production to try to protect themselves against exploitation by backward vertical integration.¹ Forward vertical integration generally takes place when producers are faced with inadequacy of the normal selling outlets for their product. Sellers may refuse to push the products of the firm in question, or they may act in such a way that resale prices are depressed so that pressure is exerted on the producer's selling price, or they may attempt to play off one producer against another. The growing interest of coal-mining firms in distribution during the inter-war years was undoubtedly due mainly to a desire to protect pit-head prices.

Where technical economies of scale derive from the linking of successive processes (as in steel manufacture) combination will most frequently take the vertical form. But quite often technical considerations do not point decisively one way or the other. There has been much debate in recent years on the merits of vertical amalgamation in the Lancashire cotton industry and certain experiments in this direction have been tried out without much success. The main argument in favour of the vertical firm (as distinct from more general arguments in favour of large-scale production) was that the standardized production of bulk lines could be most economically effected if a large output of standardized yarns were utilized within the same unit to keep the looms running to full capacity on long runs. Some of these economies would be dissipated, it was thought, if the yarns were distributed to independent weaving firms which might be interested in other lines. A further argument in favour of vertical integration was that bulk goods could be marketed more cheaply and effectively

¹ This will not necessarily involve combination of firms (since vertical expansion may be effected by the growth of individual firms) unless other special considerations favouring amalgamation apply. For example, in the case of cotton mentioned below we may cite the redundancy of capital equipment and the urge to control price competition.

through a single agency rather than through a large number of small merchants competing vigorously against each other.

A further incentive to vertical combination is provided by the desire to eliminate middlemen's profits. Where it is considered that some raw material or partly finished product is passing through an excessive number of hands between two stages of production, producers may combine vertically in order to reduce costs by annexing merchanting profits. An excessive number of middlemen almost invariably results in the depression of producers' selling prices by competition and the raising of producers buying prices through enlargement of distributive margins.

The main argument advanced against vertical combination in the cotton industry calls attention to an important defect of this form of integration. It is most difficult in practice to secure a proper balance within the same undertaking of the successive stages of production. Thus, for example, the most economical production of yarn may only be secured if it is concentrated on a narrower range of counts than is necessary to meet even the limited requirements of the weaving section working on standardized goods. Where such a balance of processes is secured it is apt to be extremely sensitive. The slightest disturbance of raw material supplies or a minor mechanical breakdown may violently disturb the whole cycle of productive operations. Vertical amalgamation also widens considerably the range of financial, administrative, and technical problems which have to be faced by management. The strain on management was probably one of the reasons for the break-up of several elaborate vertical combinations into several new horizontal combinations during the late nineteen-twenties. The most conspicuous example of this was the disintegration of the huge Vickers-Armstrong—Cammel-Laird combine, which combined steel, shipbuilding, coal, railway wagon, and electrical interests.

Horizontal combination is most frequently a by-product of industrial depression. Vigorous price competition leads to uneconomic prices and heavy losses, particularly in heavily capitalized industries and where the demand for the product is fairly inelastic. Surplus capacity is not easily or quickly eliminated, and the larger firms will seek to strengthen their

quasi-monopolistic position by absorption of their rivals, particularly if they are known to be weak sellers. Such combination is generally a preliminary to the formation of some form of cartel agreement for the industry whereby output is restricted and minimum prices maintained.

Unless the recession of demand is temporary, however, this solution may not commend itself to the larger and more progressive firms as a satisfactory solution of their difficulties. Establishment of monopoly control reduces the losses consequent upon price competition but impedes efficient technical development, maintains surplus capacity, and enforces continued under-capacity working. Horizontal combination may therefore proceed with the intention of lowering costs by concentrating production and eliminating surplus units.

In practice, it is difficult to disentangle the monopoly and the concentration motives for horizontal combination. The latter is the most frequently advertised motive presumably because it commends itself more easily to public opinion. In practice, when horizontal combines have succeeded in establishing a strong monopoly position, little more is seen or heard of concentration of production. Not all industrialists are as frank as the Chairman of John Bowes and Partners, Ltd., who is quoted¹ as saying, "Since the creation of various bodies which regulate prices and production, however, it is now possible to keep prices at a fairly economic level and, as I said, the chief argument in favour of amalgamation disappears."

Horizontal amalgamations are not always the product of depression. Where a firm has built up a predominating position for itself in any industry it may make a practice of absorbing any new competitors which appear on the scene and which might ultimately challenge its supremacy. The new rivals will probably set great store by their independence and will only submit to absorption on terms favourable to themselves. This is one reason why combines are so frequently over-capitalized and a further reason against assessment of the economic merits of amalgamation by reference to the profit experience of combinations in practice.

It should be noted that the vertical and horizontal forms

¹ By Compton and Bott, *British Industry* (Lindsay Drummond, 1940), page 93.

are apt to react on each other. For example, the existence of large horizontal combines at one stage of production may provide an incentive to vertical integration on the part of firms at a later stage in production which will fear the consequences of their sources of raw material being concentrated in too few hands. Also the larger a horizontal combination becomes the greater are its needs for raw materials and for assured selling outlets, and the greater is the probability that it will seek to cover itself by vertical expansion.

3. FORMS OF AMALGAMATION

So far we have begged the question as to how far amalgamation necessarily involves the complete absorption of one firm by another. From this point of view also amalgamation may take various forms.

The most complete form is the merger where one firm takes over the absolute ownership of the assets of another—the latter losing its separate identity. The great advantage of the merger is that it provides a complete unification of interests. The assets of the absorbed firm become indistinguishable, from the point of view of ownership and management, from the assets of the absorbing firm. The combined assets will be managed in such a way as to promote the most efficient working of the whole. Any economies available by way of concentrating production in the most efficient plants and eliminating surplus and obsolescent capital will almost certainly be reaped. No question will arise of keeping separate books, compiling separate balance sheets, duplicating administrative staff, or maintaining separate registered offices in respect of each firm joining the combination.

Mergers, however, are difficult and often expensive to arrange. Compensation for loss of position may have to be paid to the executives of the absorbed firm.¹ Alternatively, the absorbing firm may have to take over more personnel from the absorbed firm than it requires. The owners of the latter, for reasons of prestige and sentiment, may put up a good deal of resistance to absorption which may only be overcome by buying out the firm at a much higher figure than it is really worth.

¹ See, for example, D. L. Burn, *ibid.*, page 440.

The difficulties of arranging mergers are increased when, as frequently happens, the financial strength of the two parties is widely different. The assets of the weaker firm may be of negligible value in terms of future profit-earning capacity, but its nuisance value to the stronger firm may be far higher. The cost of taking over the poor firm may be increased by the claims of debenture holders to be repaid at par if the merger takes place. The stronger firm is also confronted with the difficulty that, if the weaker firm loses its identity, it will no longer be possible to claim rebates of income tax out of future profits in respect of past losses made by the latter. The strong firm may also be deterred from going through with the proposed merger because it has built up strong reserves in the distribution of which the shareholders of the weak firm may participate if they are paid out in securities of the strong firm.¹ It is significant that most of the opposition to compulsory amalgamation in the coal industry after 1930 came from prosperous firms, and that several projected amalgamation schemes in the iron and steel industry broke down because efficient and inefficient firms could not agree upon terms.

These difficulties of arranging acceptable financial terms for mergers between poor and prosperous firms are reduced if the former will agree to take securities in the latter as a form of payment. In this way the risk to the prosperous firm is much reduced and is shared by the former shareholders of the weaker partner to the proposed amalgamation. The real terms on which the latter have sold out will depend to a large extent on the results shown by the merged undertaking. In some cases the dividend-bearing period of the shares which are issued in payment has been deferred for some years in order to make the terms of amalgamation more acceptable to the prosperous firms involved. These financial difficulties constituted one of the greatest obstacles to the preparation of fair and equitable amalgamation schemes by the Coal Mines Reorganization Commission under the Coal Mines Act of 1930. Significantly enough the amending Act of 1938 provided that consideration to be paid to absorbed companies should be only in the form of securities in the combined undertaking. The proposed

¹ Also the strong firm might inherit considerable trade and bank debts owed by the poor concern.

"Hammersley" amalgamation scheme (1930) in the cotton industry fell through because the banks who were asked to sponsor the scheme refused to countenance cash payments to buy out existing interests and because they considered that the proposed treatment of certain participants was too generous.

The term "trust" is often introduced into discussions of forms of amalgamation. Sometimes the word is used synonymously with "merger" and sometimes its meaning is extended to cover holding companies or even any very large firm. The word is of American origin and should properly be applied only to an arrangement whereby controlling blocks of shares in a number of competing businesses are handed over to trustees who manage all the constituent companies as one unit. The trust originated (in the case of the Standard Oil Co. of America) as a device to evade anti-monopoly legislation. It was quickly declared illegal in the U.S.A. and has not been imitated in this country, so it need not detain us further.

The holding company is a common form of amalgamation. A new company is established which buys up the whole or a controlling interest in the shares of a number of previously independent firms which continue to retain their separate identity. Payment is made in the form of shares in the holding company. The latter administers the constituent concerns as a single unit, drawing dividends on the shares which it holds in them. These profits are then redistributed to the original shareholders by means of dividends paid on the holding company's shares. Thus, for example, Imperial Chemical Industries, Ltd., was formed as a holding company to acquire the shares of Nobel Industries, United Alkali, British Dyestuffs, and Brunner Mond.¹

There are many variants on this form. One of the operating companies which participates in an amalgamation may retain its identity—absorbing other companies by exchanging its own shares for the whole or a controlling interest in the shares of the absorbed firms. The absorbing company is not, strictly speaking, a holding (non-operating) company although the term is frequently applied. In each of the instances so far cited the constituent firms remain in being as operating companies though subject to common control. This does not

¹ Other prominent examples are Imperial Tobacco Company, Wallpaper Manufacturers, Ltd., and the Distillers Company.

always happen and the Richard Thomas-Baldwins amalgamation (1944) may be cited as an example of one of the many variations of amalgamating technique which occur in practice. The Richard Thomas firm took over the working assets of Baldwins, giving in exchange its own ordinary shares. Baldwins (the absorbed company) was left in being as a holding (non-operating) company and exists merely to receive the dividends payable on its holdings of Richard Thomas shares (plus certain other securities previously held) and to redistribute them to its shareholders. Although the Baldwins firm remains in existence it is clear that this amalgamation is more appropriately classified as a complete merger. This illustrates the difficulty of drawing clear distinctions between different types of combinations.

The advantage of the holding company is that financial and valuation difficulties are minimized. As a result amalgamations in this form are much easier to arrange than complete mergers, though it often happens that after nominally separate firms have been subject to common control for some years they are completely merged into one undertaking. Since the constituent firms retain their identity their goodwill is retained by the combined undertaking—this being an important consideration where the motive behind the combination is to secure economies of scale without meeting increased selling resistance in the market for the commodity. A further advantage of the holding company (to its promoters) is that the operations of the group can be easily cloaked from public scrutiny. It is only compelled by law to disclose the amounts of its holdings in the subsidiaries. It is not obliged to show details of their assets, liabilities, and working results. Since the subsidiary companies are frequently converted into private companies, which are under no obligation to publish a balance sheet, very little information may be available to the public for gauging the prospects of the group.¹ The holding company structure also facilitates decentralization of management where this is desirable in the interests of efficiency.

The great disadvantage of the holding company is that it does not represent such a complete fusion of interests as in

¹ The Cohen Committee on Company Law Amendment has recommended important changes in the law in this respect (see Cmnd. 6659 (1945), pages 69-70), most of which have been incorporated in the Companies Act, 1947.

the case of the merger. The identity of the separate firms is maintained and conflicting interests and policies as between the subsidiaries may continue to make themselves felt. A distinction is made between the assets of the constituent firms, and although there may be very close co-operation, some of the technical possibilities of large-scale working may not be realizable. Since the working results of the subsidiaries may have to be distinguished in practice it may become difficult to arrange complete integration of working operations, concentration of production, and joint development work. Although it may not be so in practice there is always the suggestion that the alliance is a temporary one, perhaps because what has been done can be so easily undone. This is particularly true where the holding company holds a bare majority of the ordinary (voting) share capital of its subsidiaries. Failure to pay dividends on the preference share capital may give the holders of these shares voting rights which, together with the voting rights of the minority of ordinary shareholders, may suffice to upset the control of the holding company. Also the minority of ordinary shareholders may seek a legal injunction to prevent the directors (nominated by the holding company) from acting in a way that may be detrimental to their interests though it may be in the interests of the group as a whole. Furthermore, complete centralization of administrative control is often difficult in a holding company and the necessity to maintain separate books and registered offices limits the administrative economies available to it.

Thus, although the holding company constitutes a fairly easy and cheap method of amalgamation, its control of subsidiaries may be insecure, it may be subject to internal strains and stresses and it may be impossible to achieve to the full the working economies which might be achieved by a complete fusion of firms. But it is impossible to generalize in view of the differences in detail which exist between holding companies in practice. A holding company may hold all the share capital of its subsidiaries and thus have absolute control. Also the economies available to an amalgamated concern may be little affected by the form of amalgamation. There is little difference in the economies available to the merger and holding company

respectively if the concerns to be amalgamated are two gas undertakings situated in widely separated parts of the country. Also, if the main motive for the amalgamation is the increase of monopolistic power, the question of economies available to different forms of amalgamation may be a matter of comparative indifference to the promoters of the combine.

Some mention should be made of so-called partial amalgamations, though it is doubtful whether they can be considered as amalgamations in the ordinary sense of the word. There is nearly always some element of common control of two or more businesses present in these amalgamations, but never complete control. The types of combination which might come under this head are too many and varied to permit extended reference, but some examples may be given. Two firms may combine to provide jointly for the supply of power to themselves but in all other respects remain separate businesses, actively competing with each other. Working agreements along similar lines to this have become increasingly common in the steel industry in recent years. A greater element of common control is present when a number of firms agree to form a joint committee to carry out certain functions of common interest such as central selling, transfer of quotas, purchase and closing of redundant firms, etc. But it seems best not to extend the meaning of the term amalgamation to include such arrangements which leave the constituent firms substantially independent of each other and which logically would force us to consider any form of cartel agreement or co-operative rationalization arrangement as a partial amalgamation.

We shall be considering such agreements and arrangements more fully in later chapters. Meanwhile we may note that partial amalgamations accentuate most of the advantages and disadvantages of holding companies. They are almost costless to arrange, there are no financial and valuation difficulties, publicity is minimized, and the break up of the combination is a simple matter if this should later become necessary. On the other hand the conflicting interests of the constituent firms are largely maintained, control is extremely tenuous, and, except on matters covered by the joint agreement, no technical or administrative economies such as might be expected to accrue to a complete merger are likely to be realized.

CHAPTER V

Monopoly

I. THE NATURE OF MONOPOLY

THE scope of the word "monopoly" has been considerably widened by economic theorists in recent years. Traditionally it has appeared to mean the opposite of perfect competition. The latter mainly involved the assumption that a large number of firms contributed to the supply of a commodity, no single firm producing a sufficient part of the total output to be able to affect the market price. Monopoly, therefore, came to be thought of as a condition in which the entire output of a commodity was controlled by a single firm—in the sense that the monopolist was producing an output of an identical commodity which, under perfect competition, would be produced by an entire industry.

This division of the economic field between perfect competition on the one hand and pure monopoly on the other has broken down largely on the question of what constitutes a commodity. Perfect competition rarely, if ever, exists because the outputs of different firms are never identical. The products of different firms are always differentiated in practice by reason of some difference of physical composition, adherence of particular consumers to the products of particular firms (goodwill), the use of trade marks and brands, transport costs, etc. Pure monopoly is equally difficult to conceive of since, however completely the monopolist controls the supply of some commodity, his power is always limited by the availability to the consumer of some more or less near substitute. Since in the last analysis every commodity competes with every other for consumers' patronage, the complete monopolist would have to control the supply of all goods. Perfect competition and pure monopoly are therefore seen to be limiting cases bounding the real world in which a host of limited monopolists compete more or less actively with each other. Every firm is conceived to be a monopolist in respect of its own output, its power to exploit consumers being limited by availability of near substitutes for its products and the number.

of firms producing them. If a firm is one of many producing very similar goods its monopoly power is practically zero. The demand curve for its products is almost infinitely elastic for if it raises its price slightly, the demand for its products will fall very sharply. But if one firm controlled, say, the entire output of bread in the London area its monopoly power would be considerable. There are few near substitutes for bread and the competition of bakers outside London would be limited by transport costs. The demand curve for the products of the monopolist would, therefore, tend to be highly inelastic. Continuance of this strong monopoly position would, however, depend on whether or not the entry of new competing firms into the "London bread industry" could be prevented.

As we have noted previously, a firm working under conditions of perfect competition can dispose of any output without affecting market price—i.e. the demand curve for its products is infinitely elastic. Since any additional output can be disposed of at the same price, marginal revenue is always equal to average revenue (or receipts) per unit of output. It will maximize its profits at that output where the cost of producing an additional unit (marginal cost) will just balance the receipts derived from the sale of that unit (marginal revenue). It will, therefore, produce that output at which marginal cost is equal to the price (or average revenue) of the product. It can be shown that this is the output which is produced at minimum average cost, i.e. the firm is of the optimum size.¹

The monopolist, however, will restrict output below this figure. He, also, will maximize his profit at that output where marginal cost equals marginal revenue. But because the demand for his products is less than perfectly elastic, marginal revenue is always less than average revenue (price) since price has to be reduced in order to dispose of additional output. Output is not, therefore, expanded up to the point at which marginal cost equals price and is less than the optimum output.

It does not follow that because the monopolist has maximized his profit he is, in fact, making more than the normal rate of profit earned by a firm under conditions of perfect competition. If he does so, and if entry into the industry is free, the competition of new firms will depress the demand curve for his

¹ See page 39.

products until any abnormal profits are eliminated and new competitors cease to be attracted. Also the entry of new firms will reduce the size of all firms still further below the optimum size.

The extent to which a monopolist will restrict output below the optimum will depend largely upon the elasticity of the demand curve for his products which in turn will depend mainly upon the strength of the competition he encounters from rival firms producing similar products. The extent to which he is enabled to reap large "monopoly" profits by restricting output (and raising price) will depend partly upon the extent to which the demand curve for his products is inelastic, but primarily upon restrictions on the entry of new competitors.

A monopolist may be in a position to expand his monopoly revenue by practising discriminating monopoly. That is to say he will split the market for his commodity into a number of sub-markets in each of which he charges a different price. In each sub-market he will equate his marginal cost to marginal revenue, but this marginal revenue will correspond to a higher price in those sub-markets where demand is most highly inelastic. The monopolist is enabled to expand output by lowering price in the sub-markets, where demand is highly elastic, without affecting his more remunerative "inelastic" sub-markets. It is clear that discriminating monopoly can only be successfully practised where output sold at a low price in one sub-market cannot be switched to the high price sub-market. The practice of electricity companies in selling electricity at different prices for power and lighting purposes respectively is a well-known example of discriminating monopoly.

Later on in this chapter we shall be noting that effective exercise of monopoly power often depends on collusion between a number of firms which are only very limited monopolists in their own right. In this connection we must call attention to an important simplification which we have so far been making. We have been assuming that every producer in deciding his course of action knows what the demand curve for his products is. This implies that he knows what the reaction of his competitors will be to any variation of his price and output. In practice he rarely has this knowledge.

If he does know, and if the reaction of his competitors is to follow any price cut which he makes, then it will pay him best to restrict his output and keep his price up. The price and output policy followed by each of a small group of firms producing analogous products will tend to be that which would be followed if there were agreement between the firms to follow a joint monopoly policy. The price will be much the same as would be established if the several firms combined to constitute a complete monopoly. Collusion is important in practice because firms are uncertain of competitors' reactions and this uncertainty can only be eliminated by reaching formal agreement.

These theoretical considerations enable us to perceive more clearly many of the criticisms which are frequently levelled at monopoly. Monopoly leads to exploitation of the consumer through restriction of supply and higher prices. Also, monopoly generates excess capacity in industry by facilitating multiplication of firms of less than optimum size. Excess capacity in this sense does not necessarily imply idle capital equipment or even that their equilibrium outputs could be produced more cheaply by these firms. It implies that if the productive resources of the firms in question were combined in fewer separate firms the total output of the group could be increased or, what amounts to the same thing, the same total output (of a more standardized commodity) could be produced with a saving of capital and labour resources. Furthermore, it is alleged that monopoly hinders the maximization of consumers' satisfaction. Under perfect competition each firm produces output up to the point at which marginal cost equals marginal utility to the consumer (equals price), so that the cost of additional effort and sacrifice in producing a further unit of output just balances the amount of satisfaction which its production would bring to consumers. Clearly then consumers' satisfaction is maximized under perfect competition, but the monopolist stops producing at a point where marginal cost still falls short of marginal utility. That is to say, monopoly impedes that distribution of productive resources which would promote maximum social satisfaction.

This constitutes the gist of the case against monopoly. We shall qualify some of these criticisms later, and also consider

how the force of others may be reduced in practice. But we should note meanwhile that conclusions taken over from pure theory, whilst constituting an important guide as to what to look for, should be handled carefully in practice. There are many reasons for supposing that monopoly situations may not be exploited to the full in practice, and in some cases a monopoly solution may be the only one compatible with full productive efficiency. Other examples will be given later which suggest that the theoretical indictment of monopoly does not constitute the last word on the subject.

It is clear from what has been said above that most firms are to some extent monopolists, but that their influence on the market may be almost insignificant by reason of the nature of their product, the numbers and nature of their competitors, and their vulnerability to new competition. We shall confine our attention in this chapter to cases where the monopoly position is apparently strong and where we are most likely to encounter those problems generally associated with monopoly. The dividing line between strong and weak monopoly positions is impossible to draw, but we should gain nothing in this context (and lose much in clarity) if we extended the use of the word "monopoly" to cover firms and groups of firms where competitive elements are clearly dominant.

2. FACTORS PROMOTING MONOPOLY

Various factors favour the establishment of monopoly, most of which have the effect of restricting the entry of new competitors. Monopoly power, for example, may depend upon some legal restriction—the possession of patent rights or the necessity to seek Parliamentary sanction before setting up in business as in the case of railway companies. Sometimes technical considerations produce the same result. Operation on a very large scale may be necessary before new entrants can hope to sell at competitive prices. A very large amount of capital would need to be available to any new firm trying to enter the heavy end of the steel industry and the danger of competition from new entrants is correspondingly remote. Most people could hope to command sufficient capital to enter the building industry.

Restriction of entry may be the direct or indirect effect of

combined action of those producers already in an industry who are trying to protect their monopolistic position. The shipbuilding firms which participated in National Shipbuilders Security, Ltd., bought up shipyards and disposed of the sites on condition that they should not be used again for shipbuilding for 40 years. The number of developed sites available to new shipbuilding firms being strictly limited, this action was likely to afford a considerable obstacle to the entry of new shipbuilding firms. The British Iron and Steel Federation has also used its considerable influence to impede the entry of new firms into the steel industry. The Federation possessed considerable influence with potential providers of capital for such projects and also distributed imports of semi-finished steel in this country on behalf of the European Steel Cartel. No new firm would be likely to proceed with plans to enter the industry without obtaining the approval of the Federation.

Tariffs may also facilitate monopoly. Home producers are more likely to combine to exploit their stronger monopoly position in the home market if the threat of foreign competition has been removed. Tariffs imposed by foreign countries or the existence of strongly organized groups of foreign producers may induce home producers to combine in order to exploit the home consumer more effectively, on the proceeds from which vigorous competitive selling at cut prices abroad can be financed.

Concentration of raw material supplies may place a limited number of producers in a strong monopolistic position. The nitrate deposits of Chile and the diamond fields of South Africa illustrate this. Producers are quick to see the possibilities of their position and combine to limit output by agreement in order to raise prices and maximize their profits. Rapid expansion of output by each producer might so affect market prices as to affect adversely the profits of each firm. Such monopolies, however, are rarely long lived particularly where the position is exploited sufficiently to permit exorbitant profits. The search for new areas of supply or synthetic substitutes is accelerated and is often successful. At the time of the discovery of the atomic bomb it was alleged that Canada possessed a virtual monopoly of uranium. It will be interesting to see whether history repeats itself in this case.

3. TYPES OF MONOPOLY

There are many different types of monopoly organization but they may be roughly classified under two main heads. In one category we may place any form of agreement between the great majority of firms¹ in an industry (or important section thereof) which affects their freedom of action in disposing of output, but which otherwise leaves them free to pursue independent policies. In the second category we may place any form of organization which concentrates a substantial proportion of the firms in an industry under unified control and which, though some or all the firms may remain distinct legal entities, leaves them no field of independent action. Any such combination would probably possess considerable monopolistic power, though intention to exploit that power may not have been an important factor motivating the combination. In this second category we may also place any firm which has risen to a dominating position in an industry by internal growth, i.e. without combination with rival firms. Such firms generally owe their position to some legal restriction on the growth of competitors.

4. ASSOCIATIONS OF INDEPENDENT FIRMS

The first category covers many different forms of monopoly organization which vary in detail. We attempt a short summary below, but it should be remembered that forms of organization are frequently encountered in practice which combine the main features of two or more of the types described.

If we proceed from the looser to the more formal and elaborate types of monopoly organization, the first to be noted is the gentlemen's agreement. This may cover anything from an understanding between local undertakers on funeral charges to the agreement between Imperial Chemical Industries and Unilever, Ltd., whereby the former agrees to buttress the Unilever monopoly by keeping out of the soap business. A common form of such agreement occurs when a number of producers agree to check concealed price competition by observing uniform conditions of sale, e.g. credit periods, commissions and discounts, allowances for short weight and deterioration, etc. These gentlemen's agreements represent the least highly

¹ In terms of aggregate output.

developed form of monopoly organization, and whilst they are temporary in the sense that they can be easily and quickly broken up, they may remain effective for very long periods.

A common type of monopoly organization is the voluntary association of producers for controlling output. This also takes many forms. The working of organized short time is perhaps the least formal arrangement and is generally agreed upon where the nature of the product precludes more direct methods of control or where a sufficient majority of firms are reluctant to enter into any more elaborate arrangement. The usual method of control is by means of the output quota. Each firm is given a standard output based on its performance in some past period, and is permitted in each period to produce a certain percentage or quota of its standard output. Quotas are uniform for each firm and are agreed upon in the light of expected market demand during the period in question. The aim is to restrict aggregate output to a sufficient extent to permit sales at remunerative prices. Many examples of this type of organization are to be found, e.g. in the flour-milling industry, the coal industry, and the tinplate industry. An interesting variation on output control schemes is to be found in schemes whereby producers are paid compensation for not producing output over a given period, the necessary finance being raised by a levy on all firms joining the scheme. Such a scheme operated in the Scottish Coalfield in 1928-29 and National Shipbuilders Security, Ltd., also paid compensation to shipbuilders who agreed to temporary closure of yards.

Voluntary associations of firms for controlling prices are perhaps the most common forms of monopoly organization. Minimum price schedules for the chief grades of product are agreed to, each firm participating in the agreement undertaking not to sell below minimum prices. Minimum prices are generally based on recent market experience plus standard additions to make them more satisfactory to producers. It is rare to find voluntary minimum price agreements in which prices are based on investigations of the costs of firms. In any case voluntary agreement is difficult to secure unless the minimum prices are satisfactory to the least efficient firms. Minimum price arrangements frequently have a troubled history. Where there are great disparities of efficiency and costs between firms,

minimum prices are generally high and very irksome to the more efficient firms if demand for the product is elastic. If there is great variety of product between firms, classification is difficult but necessary if evasion is to be prevented. The minimum price schedule may run into hundreds of items and this makes control extremely cumbersome. Price control is apt to be inflexible, changes in minimum prices as demand for different types of products varies being slow and uncertain. Where, as is usual, the different types of product are highly substitutable, the price schedules need to be most skilfully drawn and extremely flexible if certain firms specializing in particular types of product are not to be heavily penalized as demand shifts. Before the war, voluntary price agreements were widespread in the cotton industry but were constantly breaking up as evasion became more pronounced and individual firms became discontented. But as existing agreements broke down others quickly came into being. In certain sections of the steel industry on the other hand, where the product is more homogeneous, many price agreements of long standing are to be observed and minimum price schedules are frequently maintained for long periods without revision.

In practice, output and price agreements are frequently combined. Output control is found to be a necessary support for price control. When satisfactory minimum prices are established each firm tends to increase output, and accumulation of stocks puts pressure on the price schedules. Every firm is tempted to evade the minimum prices in order to dispose of these stocks and the price agreement quickly breaks down. But output control adds to the complexities of the scheme, particularly where output is very heterogeneous and disposed of in different markets.

The great weakness of voluntary output and price control schemes is the difficulty of obtaining agreement between all the firms producing the product or group of products concerned. The firm that remains outside the scheme can reap considerable benefits by shading prices slightly below the minima, increasing the demand for its products, and working to full capacity. A firm which subscribes to a scheme has the same incentive to evade the minimum prices if it can get away with it. There are many ways of doing this without appearing to

contravene the provisions of the scheme. Goods may be sold to subsidiary firms at minimum prices and resold at a lower price, or extended credit periods, excessive discounts, and excessive allowances for short weight may be granted to purchasers. It is clear that such schemes will be quickly wrecked if a substantial number of firms refuse to participate or if there is considerable evasion by parties to the agreement. For this reason two trends have become apparent in these forms of monopoly organization. Firstly, sanctions clauses have been drawn up which specify penalties for failure to comply with the scheme and the agreement has been drafted in such form as to make it "legally enforceable." Whether in fact such agreements would be upheld in a court of law or held to be in "restraint of trade" is not at all clear. But at any rate the possibility of legal enforcement reduces the likelihood of evasion. Secondly, there has been an increased disposition to approach Parliament to provide legislation which would compel a dissident minority of firms to enter a scheme which had been agreed to by the great majority of the firms concerned. Subject to certain safeguards designed to protect the public interest the cotton industry obtained such enabling powers in 1938. Eight years previously the Government had imposed output and price-control schemes on the coal industry. For each district they were to be drafted by a majority of the coal-owners and dissenting minorities were forced to comply. Failure on the part of a majority of coal-owners in Scotland to draft a scheme resulted in the Board of Trade enforcing a scheme of its own.¹

A comparatively rare form of monopoly arrangement is an agreement between producers to share available trade by joint allocation of contracts. The Cast Iron Pipe Association, for example, decides which member is to receive the next order and instructs him to quote the lowest price. The predominant motive here is to prevent the forcing down of prices through competitive tendering. The shipbuilders operated a similar arrangement before the war and provided, in addition, that the expenses of

¹ The Industrial Organization and Development Act (1947) provides for the establishment by Order of Development Councils in any industry where such councils are desired by a substantial number of producers. Councils may be financed by a levy on all producers and their functions may include promotion of research, standardization, uniform costing, and arrangements for co-ordinating production, marketing, and distribution.

unsuccessful tenderers were to be recouped from a central pool.

Profit pooling arrangements are occasionally given as a separate type of monopoly organization, but in practice they are generally associated with some form of selling syndicate. The selling syndicate or cartel¹ may take a variety of forms and we can only hope to touch on the main variants here. In its most highly developed form a syndicate is formed by the associated firms through which all the products of the group are marketed. The syndicate sells as a principal and not merely as the agent of the various firms. It is, therefore, able to take maximum advantage of its position as a single seller. It may discriminate in its prices between different markets for the commodity and so ensure that the maximum revenue from sales is realized. It can fix prices quite arbitrarily and there can be no question of buyers forcing down prices by playing off one seller against another. The syndicate generally pays a fixed price for the output which it takes from constituent firms and its profits may be distributed periodically between the firms, either in proportion to their trade shares, or in proportion to the outputs contributed by the separate firms. Each firm is allocated a trade share (or percentage of total sales) which is based on its share of total trade in some past period. If a firm has not contributed its percentage share to syndicate sales during a given period it is paid compensation on the deficiency. Firms which have exceeded their trade share pay a fine on the excess. In some schemes if a firm has failed to contribute its share of total sales owing to inability or refusal to supply, no compensation is payable. The classic example of the complete central selling syndicate is the Rhenish-Westphalian Coal Syndicate. Examples are to be found, with variations in detail, in the British coal industry (e.g. Lancashire Associated Collieries), the South Wales tinplate industry, and the British sewing thread industry.

A less complete form of central selling is occasionally found

¹ The word "cartel" is sometimes given a much wider significance and may be used to describe any form of agreement discussed on our first category of forms of monopoly organization. Pribram (*Cartel Problems*, Brookings Institution, 1935, page 19) defines cartels as "combinations of independent producers . . . established with a view to limiting the individual risks involved in their business activities by controlling the markets of their products."

where each firm continues to dispose of its own output but is not permitted to accept an order without the approval of some central marketing body set up by the constituent firms. Compensation for trade share deficiencies and penalties for excesses may also be introduced into these arrangements. The central marketing body can use its powers to see to it that agreed minimum prices are observed, and that the traditional "spheres of influence" of firms are reserved to them. This form of organized marketing has much in common with schemes for central allocation of contracts and is often buttressed with output control and minimum price schedules. Indeed there is very much in common between all the arrangements we have so far discussed. The fundamental ideas inspiring such agreements are always the same—the restriction of price competition, the equitable sharing of the available trade, the raising of monopoly profits by concerted action, and the pooling of the proceeds.

The reason for the adoption of the most elaborate type of arrangement (the central selling syndicate) is the tightening of control over members and the desire to reap the advantages of facing buyers with a single seller. It is not surprising, therefore, that where conditions are favourable, there is nearly always persistent development of the more rudimentary schemes in the direction of more elaborate and effective organized marketing arrangements. Difficulties of quantitative regulation and detailed price control of highly diversified products are greatly reduced by central selling and little possibility of evasion on the part of individual firms exists when output is marketed by one agency. The difficulties of obtaining the support of all producers and restricting the entry of new competitors, however, remain.

Organized marketing agreements of the type described above as being in our first category of monopoly organization forms, are generally favoured where too many firms exist for fully unified control to be effective. But such organizations have sometimes been formed where one or two firms dominate an industry. Thus the Lever soap firm completely dominates the U.K. Soap Manufacturers' Association, which exists chiefly to regulate prices, and the Rank and Spillers flour firms dominate the Millers' Mutual Association, which is mainly concerned

with output regulation. Thus even when dominating financial units of control have been built up with a strong monopolistic position they nevertheless find it desirable to control the activities of a limited number of small competitors by means of cartel agreements. Nevertheless the great merit of the cartel agreement from the producers' point of view is that it permits monopoly advantages to be reaped in spite of the fact that firms are many and that no one firm is in a commanding position. They are frequently generated by depression, particularly in heavily capitalized industries where, as we have seen, the emergence of excess capacity and the impact of price competition are likely to be most severe. We have already remarked on certain factors which are likely to militate against their success—notably diversity of the product and the difficulty of getting 100 per cent agreement and of controlling evasion. A further factor which has to be reckoned with is the diversity of interest which frequently develops between "pure" and "mixed" (or vertically organized) undertakings. The latter, not unnaturally, wish to be free from control in respect of sales to other sections of their own undertakings. The "pure" concerns, equally naturally, fear abuse of such a privilege and do not see why any part of the market for the product should be specially favoured. Finally, organized marketing agreements are frequently exposed to great stress and strain when some of the firms dispose of large outputs in overseas markets where foreign competition is acute. They desire that minimum prices should be lower and more flexible in their case and that quantitative restrictions on their output (and therefore on their ability to supply foreign consumers) should be less severe. Firms which are little interested in foreign markets will oppose such developments for fear that output may be surreptitiously switched from the foreign to the home market.

5. THE FULLY UNIFIED MONOPOLY

The second category of monopoly organization comprises those forms which bring a substantial proportion of the output of an industry under fully unified control. The holding company or the complete merger may be the instrument of monopoly power and we have already noted how their formation may be

inspired by a desire to strengthen control of the market. It is comparatively rare for a complete merger to dominate an industry, perhaps the outstanding example being the firm of Tate and Lyle in the sugar-refining industry. But there are quite a number of cases where one or several large firms (which are not, strictly speaking, complete mergers) exercise a commanding influence over an industry. Thus, for example, Imperial Chemical Industries dominate the chemical industry; Unilever, the soap and margarine industry; Courtaulds and British Celanese, the rayon industry; Rank and Spillers, the flour-milling industry; British Aluminium, the aluminium industry; and so on. Some care must be taken, however, in describing these units as monopolies. It is certain that the desire to increase monopoly power has inspired the growth of many firms to the point at which they can dominate an industry and that in most cases this power is to some extent exploited. Moreover, as we have already seen, many of these large firms have taken the lead in organizing their smaller rivals into some form of cartel agreement which the dominant partner will inevitably control. But other motives (e.g. the desire to obtain economies of large-scale working) have also played their part and it may be in practice that the very large firm will pay more attention to expansion of output and reduction of costs than to attempting to exploit the consumer.

Into this second category also fall various concerns which are protected by law in some special monopoly position. This is true of gas, electricity, and water companies, the British Broadcasting Corporation, the London Passenger Transport Board, and others. There are no stronger monopolies than these, and although safeguards have been erected by Parliament to protect the consumer they remain monopolies none the less.

6. PROTECTIVE DEVICES

However strongly entrenched and effective a monopoly may be it is nearly always exposed to the threat of competition which might undermine its position unless vigorous action is taken. There are many devices which are on occasion used by monopolies to protect their position. One of the best known is the deferred or loyalty rebate. The deferred rebate, widely

employed by the Shipping Conferences (meetings of particular shipowners to decide common freight charges), takes the form of a special rebate on freight charges to firms which ship goods exclusively in "conference ships" during a given period, the rebate being actually credited in a subsequent period if loyalty to the Conference continues. Loyalty rebates in the form of reductions of selling prices to consumers who undertook to purchase the whole of their requirements of certain materials from a particular group of manufacturers, have been common for many years in certain branches of the steel industry as a means of strengthening price-fixing associations. The primary purpose of the rebates is to tie consumers more firmly to the monopoly group and to weaken the position of outsiders. It has also been alleged that the rebates had a further economic justification in that by stabilizing the volume of trade they made more economical operation of production or services possible.

The device of the exclusive agency is sometimes used in one form or another as a means of monopoly protection. Manufacturers may agree to dispose of their products through one dealer only in each area on condition that the dealer agrees not to stock competing products. This permits the manufacturers to assure themselves that conditions of resale are observed and that the dealer will not be in a position to play off competing products against their own. Monopolies are always beset by the fear that the competition of merchants and dealers will undermine the agreed prices, or that the middlemen will do everything to encourage competing products and so undermine the monopoly position. The exclusive agency is an obvious method of tying the dealer to the monopoly. In other cases the monopoly organization goes itself into distribution or alternatively agrees to deal only with a limited register of distributors—a necessary preliminary to registration being agreement by the distributor to observe standard conditions of sale laid down by the monopoly. Once again a further justification, other than monopoly protection, is advanced in favour of these arrangements. The exclusive agency is said to constitute a guarantee that the dealer is technically qualified to handle and service the product. The registration of distributors is often defended on the ground that it is a necessary preliminary to rationalization of the trade—i.e. a reduction in

the numbers of middlemen and less overlapping in their areas of supply.

One weapon held in reserve by most monopoly organizations (though not much liked by them) as a means of crushing new competitors is the price war. Prices may be fixed temporarily well below the cost of production as a means of squeezing out competing firms. The monopoly reckons that temporary losses are well worth while if this means a considerable strengthening of their monopoly position in future. Further new competitors, it is hoped, will be deterred by the ruthless fashion in which their predecessors were eliminated. The rise of the Standard Oil Company of America was marked by many such stormy episodes. Sometimes the competitors cut prices first and so provoke retaliation from the monopoly. Certain independent tobacco firms in this country have in the past, by gift coupon schemes or outright price reduction, threatened the position of those firms organized in the Imperial Tobacco Company. The latter has been forced to retaliate with similar devices, but never to the point at which the independents have been threatened with elimination from the market.

Monopolies sometimes use the boycott against firms which try to undermine their agreed prices. At one time "cut-price" tobacco shops were quite common in this country and the Imperial Tobacco Company has done everything in its power to cut off their supplies. Here the selling price of the tobacco companies is not directly threatened, but the manufacturers are aware that if they permit a lowering of retail prices through competition it will be only a question of time before they will be under pressure to reduce their own selling prices.

This short summary of monopoly protective devices is by no means exhaustive. Organized producers in an industry often have more subtle means available to them to suppress new competition. A national cartel may be a party to an international cartel agreement and it may be able to deny access to foreign markets to the new-comer. It may have the ear of important financial interests whose support would be necessary to the new project. It may resort to unfair practices such as the maldescription of the proposed new product, or start rumours concerning the soundness of the technical processes

involved, or doubt may be cast upon the integrity of the promoters of the scheme.

7. MONOPOLY AND INDUSTRIAL EFFICIENCY

We must now return to the question of the efficiency of monopolies. Various reasons have already been suggested for believing that monopoly involves maldistribution of productive resources. In the light of our discussion, how far are these possibilities of inefficiency likely to be borne out in practice? No final answer can, of course, be given since in the last analysis it depends on the detailed examination of individual cases. Even if this were possible it would be found that industrial efficiency is not a simple concept and that careful examination of the facts would not get us very far. But certain important generalizations are possible.

In this connection our distinction between first and second category types should be carefully borne in mind. As regards the former, particularly in its more highly developed forms, there is little question that efficiency is impeded. Its primary purpose is to protect existing capital values and to reduce the incentive to technological rationalization. Prices are (if agreement is to be secured) generally set at a level which covers the costs of the least efficient firm which is quite possibly over-capitalized and working a large proportion of obsolescent capital. It is true that more efficient firms still have some incentive to keep costs down since their prices are more or less fixed. But this will hardly apply to the question of introducing new capital equipment. This will constitute an economical proposition only if its full cost charged over output is less than the prime cost of the existing equipment. The latter will certainly be low, but the former may be lower if it is worked to its fullest capacity. But the restrictions on output imposed by the cartel agreement will probably not permit working to full capacity. It therefore often pays the relatively progressive firm not to proceed with technical improvements, but to sit back and draw its monopoly profits by working its existing capital. On this basis, as we have said, the firm may still increase its profits by maintaining the highest possible level of efficiency with its existing capital and organization. But we cannot be too certain even of this. Easily won monopoly

profits may induce slackness and the firm may not wish to minimize its costs for fear that public opinion may force a revision of cartel prices.¹

In most cartel arrangements the efficient are to some extent forced to carry the less efficient. The standard output is normally based on performance in some past period and, for a relatively inefficient "declining" firm, this may exceed its present ability to supply. The more efficient and progressive firms which may still be in the development stage can only expand their output (their standard output being relatively low) by purchasing quota rights from the declining firms. If the former refuse to do this and exceed their permitted outputs or trade shares, they have to pay compensation to firms which have not reached their permitted outputs. In most cartel agreements provision is made for the revision of standard outputs but revision is slow and impeded by the opposition of inefficient firms. Where revision does take place it often takes the form of revising upwards the standard outputs of the developing firms without reducing those of declining firms so that the advantage to the former is not as great as it appears to be. Also we have to take account of the fact that cartel agreements nearly always involve the spreading of output so that where surplus capacity exists high cost under-capacity working becomes general. In some cases this is offset by quota transfer and by the incentive given to developing firms to buy up their weaker brethren and their quota rights with the idea of expanding and concentrating output. This has happened on an extensive scale in some industries, but hardly at all in others. The weaker firms, having been granted cartel protection in the form of a sales participation or output quota, set too high a price on themselves to permit their purchase and elimination. The cost of acquiring surplus quota rights may also be prohibitive and some schemes have provided for the regulation of quota transfers and have enforced reasonable prices.

These sources of inefficiency and waste of productive

¹ Yet cartel agreements may restore an element of confidence to a depressed industry, and so encourage new investment which would not otherwise take place. This seems to have happened to some extent in the British steel industry since the establishment of the Iron and Steel Federation in 1934. But other factors were also at work here including the placing of a tariff on steel imports.

resources are a serious indictment of cartel monopoly forms. Generally speaking they outweigh any economies which may be the result of cartelization, but it would be wrong to deny that such economies are occasionally realized. The cartel, as we have seen, is frequently a form of truce called in a fierce competitive struggle induced by declining or fluctuating demand. We have already noted that such competition is often wasteful, and it is a point in favour of cartels if they can be shown to be less wasteful. Thus the cartel may be the means of preserving during a temporary slump workable and efficient capital assets which may be brought back into production later. On the other hand, if the decline in demand is prolonged, the cartel certainly delays adjustment to the new situation which must come sooner or later. Although the competitive struggle does not necessarily work quickly, or with ideal discrimination, it probably does more to promote rapid adjustment and the long-term efficiency of industry than the cartel.¹

When the cartel takes the form of the fully-fledged selling syndicate it is probable that selling costs per unit of output will be reduced. Competitive advertisement within the group is eliminated and the constituent firms can economize in the man-power formerly used in their selling departments. Also, since the outputs of the various firms are no longer sold in competition with each other, further economies may be achieved through increased standardization of the product—standardization taking the form mainly of cutting out expensive but almost useless "frills" which were originally developed as "selling points." The extent to which such economies are achieved in practice, however, will depend very much on the stability and prospects of permanence of the monopoly organization. No firm will break up its selling organization or concentrate more on utility lines until it is assured that the competitive struggle will not be renewed at an early date.

A much stronger case can be made out for forms of monopoly organization which we placed in our second category. For

¹ The wastes of the competitive struggle are not only apparent when an industry is in decline. The chaotic condition of road passenger transport during the nineteen-twenties affords an illustration of what may happen when an expanding industry is over-developed. There is good reason to suppose that the Road Traffic Act which, in effect, cartelized the industry resulted in more economical use of resources.

reasons previously given there is less conflict of rival interests in these cases than in loose associations of independent firms. In the cartel the efficient and the inefficient are frequently at odds with each other, particularly if prices are high and are producing marked reactions on market demand. In the fully unified form of monopoly organization with its (more or less) complete pooling of resources there are greater opportunities to lower costs by integrating processes and concentrating production. There is every incentive to take advantage of these opportunities since the monopoly is not restricted in any way in attempting to maximize its profits. The rate of technical innovation is likely to be greater than in the case of cartel organizations but, perhaps, less than in the case of free and open competition between firms. Under free competition a hot pace is set by progressive, and possibly new, concerns which are always trying to snatch competitive advantages over their rivals, whereas the unified monopoly organization will not desire, or be forced into, a too rapid rate of replacement of capital assets. But at least it may be said that many of the positive impediments to technological advance which we found in the case of organized marketing schemes will not apply to the unified monopoly. This conclusion seems to be borne out by the facts. Some firms in a strong monopolistic position have been accused of holding up technical advances whilst others (e.g. Imperial Chemical Industries) have a very impressive record on the technical side. On the entrepreneurial side it is difficult to say whether the monopoly combine or perfect competition is likely to achieve greatest efficiency. The combine can afford better men, but the question remains as to whether there are available more than a handful of men who are capable of controlling very large concerns. The combine may become cumbersome and unwieldy, initiative may be stifled by red tape, and there may be delays in making vital decisions. It is perhaps significant that in recent years Imperial Chemical Industries has been forced to decentralize a good deal on the managerial side.

In other respects the unified monopoly organization can take advantage of economies of scale. On the buying side it is stronger than the cartel or the competitive firm, whilst on the selling side it can be matched only by the complete selling

syndicate. It can command additional financial resources more easily and cheaply than cartelized or competitive firms, and since it is concerned with the bulk of the entire output of a commodity it can more easily estimate future market trends. For these reasons it can take a longer view than most firms and can sponsor long range development projects with greater assurance. We can say fairly confidently, then, that there is no reason to suppose that, under suitable conditions, this form of monopoly organization will work less efficiently than a number of firms under perfect competition. The suitable conditions generally comprise those which will enable considerable economies of scale to be reaped. In some industries technical conditions are such that it is clearly in the public interest that a wide market area should be reserved exclusively to one firm. This is particularly the case in gas, electricity, and water supply, and a strong case can be made out for monopoly in other industries as well. The difficulty is to obtain the low cost advantages of monopoly where these appear to be considerable whilst protecting the public against exploitation. We shall return to this question in the next chapter.

The strong case which has been made out for the efficiency of the monopoly combine under certain circumstances is hardly borne out when their results in practice are reviewed. This may be explained in a variety of ways. Many monopoly combines have been built up where circumstances are not particularly favourable to increased efficiency. They have been built up chiefly with an eye to exploitation of monopoly power through higher prices, and advantage may not be taken even of those efficiency opportunities which are available. They are frequently over-capitalized and most of them take the holding company form which may limit access to important sources of cost reduction. Other combines are highly efficient and do not exploit the consumer, but may nevertheless show very modest results. The directors may not be greatly interested in the dividends they distribute to ordinary shareholders. Their own fees are probably quite satisfactory, they enjoy power and prestige, they find it convenient to buy peace through high wages and expensive staff welfare schemes, and are much aware of the possible repercussions of declaring very high dividends.

8. MONOPOLY AND PLANNING

Much has been written about the usefulness of monopoly organizations as instruments of capitalist planning and as stabilizers of a system of private enterprise. As regards the former there is little evidence that there is any more conscious planning than takes place in most well-run businesses. Monopolies like other firms draw up output and development programmes, plan sales campaigns, etc., but take the market very much for granted and do not concern themselves with the wider repercussions of their actions on the economy as a whole. Monopolies are necessarily large-scale units and in a world of monopolies all business decisions would be taken at a higher level as it were and, if an authority existed for the purpose, co-ordination of those decisions to conform to some over-all plan would be simplified. Only in this sense can monopolies be said to be instruments of "planning." What is usually meant by planning in this connection seems to be that prices and output are not any longer the outcome of the impersonal vagaries of the market, but are subject to conscious control based on scientific investigations of the facts. So far as one can tell there appears to be very little in this. Planned outputs for purposes of output control are often based on the vaguest ideas as to what is likely to be the future of market demand, and since quotas have necessarily to be fixed in advance inconvenient shortages and surpluses often result. Some cartels have devised fairly flexible output-control arrangements by which quotas can be varied at short notice as the situation develops. But this would denote the absence rather than the presence of skilled forecasting. As for prices, they are very rarely based on cost investigations of constituent firms for various types of product. Generally, existing market prices and classifications of goods are taken over and such additions made to them as will satisfy the constituent firms.

9. MONOPOLY AND ECONOMIC STABILITY

Whether or not monopolies stabilize the level of economic activity is a very difficult question to answer. If a monopoly is sufficiently large for its own level of activity to affect the demand for its products, then considerable stabilizing effects

may make themselves felt. It can dictate, within limits, the speed of the current instead of having to submit tamely to being carried along by it. It may be argued that in times of incipient depression it can maintain an even rate of output, stocking any unsold surplus, in the fairly confident knowledge that by maintaining the level of employment and incomes it will be able to dispose of the output without lowering prices. Stability of employment, output, and prices in a considerable section of the economy should arrest any tendency to cyclical recession which is making itself felt elsewhere. But monopolies are rarely in this position, even if a number should agree to co-ordinate their policies in an effort to combat cyclical fluctuations. Normally the attempt by a monopoly organization to maintain prices in times of falling demand will produce a considerable falling off of marketed output. If output is maintained prices will tend to oscillate. Prior to the inauguration of price and output-control schemes in the coal industry there was a marked tendency for output to be maintained throughout each cyclical period. After the introduction of organized marketing arrangements prices tended to remain steady throughout the cycle whilst output oscillated violently. Monopolists desire an even rate of production for obvious reasons, and it would seem that if it became known that they were going to maintain prices at about the same level in prosperity and in depression, such an even rate of demand would be secured since orders have to go to them anyhow and there is no advantage in ordering at one time rather than another. But this clearly would not be the case. The accrual of orders seems to be a function of the general level of activity rather than of the price of the article in question. In the absence of control by monopoly organizations prices are scaled down considerably in depression, but this seems to have little effect on aggregate demand. Nor is it certain that monopoly organizations can, in fact, swim against the tide by keeping prices and output steady in depression and recovery. During the recovery phase shortages develop and no monopoly organization can prevent its members from taking advantage of the situation. Actual prices will rise, though quoted cartel prices may remain nominally steady, but it may nevertheless be true that they will not rise as much as under conditions of free

competition since cartels can often release surplus capacity to deal with the shortages more quickly and cheaply than if new capacity had to be developed. If prices in the depression phase are maintained a premium will be placed on firms breaking away from the association since, although the demand for the product as a whole may not respond to lower prices, a particular firm may benefit considerably from under-selling the cartel. Sooner or later the cartel will be forced to bring down its prices as was clearly shown when certain sections of the steel industry tried to maintain prices during the temporary recession of demand which occurred in 1937-38.

In some respects monopolies may be expected to exert a de-stabilizing influence in that they tend to depress wage incomes and expand profit incomes. Since a higher proportion of the latter tend to be saved, the propensity to consume is reduced thereby. But this may only result in economic activity fluctuating around a lower level rather than an increase in the range of economic fluctuation. Also, the maldistribution of income resulting from monopolies may be far less than is often supposed since organized labour has shown itself to be fairly adroit at cashing in on monopoly profits.

On the whole an increase in the scope of monopoly organization may be expected to have a stabilizing effect, but this effect is not likely to be considerable where monopoly is still the exception rather than the rule. Prices in monopolized industries are notoriously more stable than in other sections of the economy,¹ and the stickiness of certain prices during the depression phase of the trade cycle will tend to reduce the range of fluctuation.²

¹ *Vide* Pribram, *ibid.*, page 83.

² *Vide* Hicks, *Value and Capital* (Oxford, 1939), page 265.

CHAPTER VI

Control of Industry

I. EMERGENCE OF THE PROBLEM

DURING the nineteenth century when freely competitive private enterprise was in its hey-day in this country, the control of industry was not a subject which aroused much speculation. Industries were composed for the most part of large numbers of small firms, completely independent of each other and actively competing between themselves. Such a system of industrial organization was claimed to be democratic in the sense that working men could, and frequently did, rise into the ranks of the employer-capitalists. Business decisions were taken by this host of small capitalists, who were most often the substantial owners of the businesses which they controlled. They took the risks and either reaped the profits or suffered the losses. Authority was, therefore, widely dispersed and such control as existed was exercised by the impersonal forces of the market which reflected the wants of consumers, and, through the price mechanism, diverted productive resources into those channels which would result in the production of a national dividend designed to satisfy those wants to the maximum extent possible. The decisions of each entrepreneur were controlled by the market, and market prices were regarded as established facts beyond the control of each individual employer. Possibilities of monopolistic exploitation were limited, consumers' wishes were paramount, and the free play of competitive forces in the market ensured that the survival of firms would depend on their efficiency. When aggregate output was given, the price was the lowest at which such an output could be produced. The output produced was the maximum which could be produced at that price. Within the fairly rigid limits imposed by the market, employers were free to organize their productive resources as they wished and to decide what goods and what quantities of goods they should produce. Workers were free to sell their labour in the dearest market and consumers were free to direct their money demand

for goods into any channel in the confident knowledge that the system would respond to their wishes.

The virtues of efficiency, freedom, and democracy were frequently claimed for such a system. The question of control did not arise in any fundamental form, for the system not only controlled itself, but controlled itself in such a way as to achieve (in theory at any rate) the most economical results. But it is extremely doubtful, to say the least, whether the system ever achieved this pitch of perfection.¹ Also, what many economists considered to be an ideal result did not always commend itself to others who took a wider view. At any rate the system we have described became increasingly the subject of criticism which led inevitably to demands being made for changes in the control of industry. The criticisms were in part directed against the system as it stood and in part against perversion of it which appeared in the course of time. Demands for reform partly took the form of demands for changes in the balance of power within the system (which in so far as it resided in individuals rested with the employers) and partly demands for more conscious social control of industry.

The main criticisms may be briefly noted. The development of private enterprise was associated with increased maldistribution of income, the very high profits realized by many entrepreneurs being contrasted with the low wages of labour. The wage bargain was alleged to be inequitable since the bargaining power of the employer far exceeded that of the individual employee. The system in responding to the wishes of consumers responded only to those wishes backed by money demand, with the result that fur coats might be produced whilst the workers lacked bread. The competitive system also lacked stability, proceeding from boom to crisis with monotonous regularity. The suffering occasioned to the working classes by trade depression and unemployment called attention to the fact that their stake in industry was in some respects greater than that of their employers. Yet the employer decided what, if any,

¹ The preceding paragraph presents, of course, a much over-simplified picture of the pattern of nineteenth-century industrial organization. It does, however, represent roughly the norm towards which modern industrial capitalism at first tended to work, and from which most of the theoretical justification of the system was derived.

employment was to be offered and to whom it was to be given. Finally, criticism was directed against the narrowness of the economic calculations on which entrepreneurs based their decisions. Considerations of costs to the individual employer were alone considered to be relevant. Incidental costs to the community of any course of action decided upon by him were ignored. The loss of amenities, ill-health, increased laundry costs, etc., to local inhabitants caused by smouldering rubbish heaps would not deter the employer from utilizing the cheapest and most convenient site to himself for such disposals. Factory welfare and training schemes for employees might pay a handsome social dividend, but they might nevertheless be neglected by an employer on the ground that he could not be certain of reaping sufficient benefit to cover the costs involved. Well trained and physically fit employees might transfer themselves to rival firms which paid higher wages, but which provided neither welfare nor training facilities, and might dismiss the men when their labour power began to wane.

2. SOME PARTIAL SOLUTIONS

These criticisms were directed in the main against inherent defects in the system. They accelerated the search for alternative forms of enterprise and the demand for restrictions on the power of employers. The latter resulted in the formation of Trade Boards to protect labour (by the prescription of minimum wages) against exploitation, the promotion of factory legislation to limit the hours of labour and to lay down minimum standards of working conditions, the placing of Trade Unions in a special legal position in order to strengthen the bargaining power of labour, and so on. The former resulted in various new forms of business organization which have had varying degrees of success and which cannot be reviewed in detail here. The most outstanding example is perhaps the Co-operative Movement. On the retail side consumers combined to form their own retail shops the management of which they controlled and the profits of which they shared proportionately to their purchases. The various retail co-operative societies combined through the co-operative wholesale societies to engage in a wide range of productive activities. The movement has achieved a high degree of success, but its significance should

not be exaggerated. In essence it is a device for appropriating to consumers the profits of private enterprise. The employees, as such, are in no special position and have no voice in management. In some respects their employers are more enlightened than most, since management committees are frequently made up almost exclusively of working men and women in their capacity as consumer-members. But it has not been difficult for these co-operative societies to fit themselves into a predominantly private enterprise system. Their great virtue has been to widen the opportunities available to persons of humble origin to achieve managerial positions of great responsibility. On the other hand it is perhaps true to say that control is frequently vested in persons whose adherence to the ideals of the movement is more conspicuous than their ability and that co-operative enterprise has lacked something of the zest and initiative of private enterprise. The success of the movement appears to have been due rather to the loyalty of its members than any conspicuous merits of the form of organization itself.

Other forms of organization have been experimented with at various times in which the main emphasis has been placed on securing for the worker a voice in the control of the firm. The employees may be given a share in profits which is paid out in the form of securities in the firm. These securities give labour the right to be present, and to vote, at meetings of shareholders and perhaps to nominate one or more of the directors. In such a case it will be noted that the employees acquire a voice in management not as employees but as shareholders, i.e. as part-owners of the business.

The idea that those who work in an industry should control it provided the main inspiration of syndicalism and guild socialism. The protagonists of syndicalism urged that local organizations of the workmen in each trade should control the means of production in that trade, co-ordination between the trades being achieved through some form of federal organization. Control by the workers was not to be hampered by State oversight of policy in the general interest. Consumer interests appear to have been regarded in the final analysis as identical with the interests of producers, which would hardly be the case unless syndicalism were implemented on

a national scale. Even then the interests of consumers could not be regarded as being adequately protected by a tug of war between the conflicting interests, and possibly conflicting policies, of a large number of worker-controlled trusts. The guild socialists sought to vest the ownership of the means of production in each industry in the State, control being exercised through workshop committees, and district and national councils representative of workers in the industry. Various versions of guild socialism exist, but generally speaking the right of the State to a voice in control through the appointment of representatives to the national controlling bodies was recognized. Also consumer interests might be specifically represented and the term "worker" was widened to include technical, managerial, and administrative groups. But apart from certain very limited experiments these ideas were never put into practice in this country.

In both these cases more or less absolute control of particular industries by the workers engaged therein was envisaged. Both doctrines were extremely vulnerable to criticism and particularly to the point that they involved the supplanting of one vested interest (the capitalists, or owners of the means of production) by another (labour) without the competitive safeguards associated with predominantly small-scale private capitalism. But less radical experiments in the association of labour with the control of industry have become increasingly common in recent years. The Whitley Committee, appointed in 1916, recommended the formation of national councils, district councils, and works committees representative of employers and employed which would discuss working conditions, the better utilization of the practical knowledge and skill of workmen, the improvement of processes, machinery and organization, and appropriate questions relating to management. The Whitley councils were intended to supplement rather than supplant existing collective bargaining machinery of trade unions and employers' organizations and it was clearly envisaged that they should deal with questions of production and organization which were formerly the province of management alone. Few remnants of the Whitley system now remain except in Government departments and industrial establishments, although between the two great wars there was a steady

development along these lines, chiefly in the form of an extension of the functions of joint trade union and employer bodies, the main concern of which had formerly been with wages questions and hours of work.

During the 1939-45 war there was considerable development in this field.¹ Joint Production or Works Committees were established in most major industries, and representatives of organized labour and employers were attached in an advisory capacity to the Government's central production executive and to the regional production bodies. With the ending of the war, chief interest has centred in the local Joint Production Committees and it will be interesting to see to what extent the workers will maintain their strengthened position in the control of industry. During the war some of the joint committees worked well and others worked badly. Some degenerated into tribunals investigating cases of absenteeism or into "talking shops" where petty grievances against management could be exploited. In other cases managements have been extremely unco-operative and have resented any interest taken by workers' representatives in management and the organization of production. But many of the committees have been extremely fruitful, eliminating causes of industrial friction and promoting efficiency in the factory, workshop, or mine. No general verdict is possible. It should be noted, however, that these committees have no executive power. Final authority still rests with management, and labour's position in the control of industry is confined to putting up suggestions for the consideration of management. It is extremely important that machinery for this purpose should exist, but it hardly constitutes a satisfactory settlement of the claims of labour.

But the most serious criticisms of private enterprise have resulted from its tendency to depart radically from the form which it tended to take during the nineteenth century and which we have described above. Public opinion has become increasingly conscious of the dangers inherent in the growth of the size of the average business unit, the steady development of monopoly organizations and monopoly practices, the growing concentration of economic power, and the tendency

¹ For an exhaustive survey see *British Joint Production Machinery*. International Labour Office, 1944.

for control of industry to be dissociated from ownership. Present interest in the problems of industrial control derive very largely from this source, and it is these considerations which are most likely to lead to radical changes in the future.

3. CONTROL OF MONOPOLY POWER

The main criticisms of monopoly both in theory and in practice have already been dealt with. In addition it is frequently alleged that the wastes of competitive advertisement and the over-elaboration of distribution are due to monopoly. It is true that competitive advertisement could hardly exist under perfect competition, but it is also true that a strong monopolist would not need to indulge in it on any considerable scale. Competitive advertisement is a feature of imperfect competition and is an instrument which is often used to build up and strengthen a rather weak monopoly position. Similarly the duplication of needlessly expensive selling organizations is not to be associated with strong monopolies, but rather with the existence of a large number of competing firms in an imperfect market.

In other respects also the case against monopoly and in favour of some form of social control has frequently been exaggerated. Any maldistribution of income resulting therefrom may be counteracted in practice by an appropriate taxation policy. The so-called "surplus capacity" resulting from monopoly may reflect a legitimate desire on the part of consumers for variety of products. The fact that satisfaction is not maximized by monopoly because marginal cost is less than price is not decisively proved, for the marginal utility of money differs for people with different incomes. Where labour is producing goods which are mainly consumed by the rich an increase in aggregate satisfaction may result from restriction of output to a point at which marginal cost is less than price. An additional unit of output, at the competitive margin, may cost more in terms of real satisfaction than is realized by the consumption of that unit by a person to whom the marginal utility of a unit of money is very low. Furthermore there are always certain implicit economic controls and concealed social controls at work to restrain monopolists from great excesses. Competition or the fear of new competition is

not often finally suppressed, the elasticity of demand is generally such that monopolists have seriously to consider the effects of output restriction on unit costs, and monopolists cannot afford to risk a public outcry against themselves if the consumer is exploited too ruthlessly.

Moreover we have seen that the establishment of virtual monopoly may be the only means by which most economical production can be achieved. In considering the control of monopoly we should therefore bear in mind that it is not a thing to be extirpated root and branch, but something to be carefully regulated and controlled according to the merits of each particular case. But this must not lead us to forget that the anti-monopoly indictment is still very serious particularly in some of the forms which monopoly takes in modern industrial society.

An exhaustive account of the various ways in which governments have tried to exercise firmer control over industry with the intention of preventing abuses of monopoly power would fill many volumes. Only the main lines of approach can be considered here.

The State may make illegal certain forms of monopoly organization, as was the case with the trust in the U.S.A. "Unfair" practices which are frequently used to support and strengthen monopoly power may be restricted by giving any aggrieved person or corporation the right to appeal to a special tribunal, which could order the person or corporation responsible to desist from such practices in future. In Great Britain some measure of restraint is placed on cartel organizations by the general presumption that the common law regards all monopolistic agreements as being in restraint of trade and contrary to the public interest. In one important court decision towards the end of the nineteenth century the general rule was laid down that "all interference with individual liberty of action in trading and all restraints of trade in themselves, if there is nothing more, are contrary to public policy and therefore void."¹ In recent years, however, it has become apparent that restraints on monopoly imposed by the common law have been much weakened by court decisions. The present

¹ Quoted by A. F. Lucas, *Industrial Reconstruction and the Control of Competition* (Longmans, 1937), page 351.

position appears to be that monopoly agreements may be upheld by a court of law if they are held to be reasonable as between the parties and that the latter are the best judges as to what is reasonable between themselves. Nor is the plea that a particular restraint of trade is contrary to public policy likely to meet with much success, for it has been held that "the onus of showing that any contract is calculated to produce a monopoly or to enhance prices to an unreasonable extent will lie on the parties alleging it and if once the court is satisfied that the restraint is reasonable as between the parties this onus will be no light one."¹ One commentator on the present state of the law in this country has gone so far as to allege that the courts not only view monopoly without observable repugnance but with extreme solicitude.² The fact that prior to the 1939-45 war the State actively encouraged cartelization—in steel, coal, cotton, and agriculture, for example—will probably result in a further weakening of any restraints imposed on monopoly organizations by the common law.

The great merit of legalistic devices for the control of monopoly is that they may force potential monopolists into forms of organization which appear *prima facie* less inimical than others to the public interest. If trusts are declared illegal and cartel agreements are held to be in restraint of trade, firms may be forced to combine in order to establish themselves in a strong monopoly position. This may sometimes result in the realization of economies of scale and concentration which will offset any injury which they may effect in other directions. Their great defect (when restrictions are imposed by statute) is that it is almost impossible to draft a law which an astute company lawyer cannot find a way round. Also, checks administered by the common law are too uncertain to constitute an effective deterrent.

The general policy in this country has been for the State to approach each case on its merits. Where a monopoly has been granted by virtue of an Act of Parliament some machinery has generally been devised for the protection of the public interest. For public utilities, price policy has been prescribed,

¹ Attorney-General of Australia *versus* Adelaide Steamship Company, A.C. 1913.

² A. F. Lucas, *ibid.*, page 352.

profits regulated, standards of service laid down and obligations to supply imposed. When, in 1921, the Railways Act provided that the railways should be amalgamated into four large territorial groups, the Railway Rates Tribunal composed of independent persons was set up to determine rates and furnish an annual report to the Minister of Transport. When enabling powers were given to the cotton industry in 1938, it was provided that three independent members should be appointed by the Board of Trade to the Cotton Industry Board whose business it was to consider sectional price-fixing schemes. When output and price-control schemes were enforced in the coal industry by the Coal Mines Act of 1930, special Committees of Investigation were set up to consider complaints against the operation of the schemes. In the steel industry during the early nineteen-thirties the Government encouraged reorganization along similar lines, and although no statutory action was taken, the Import Duties Advisory Committee appears to have been required to fill the role of watch-dog of the public interest. But where a strong monopoly organization has been built up without publicity and without direct or indirect Government encouragement and assistance, no specific provision for its control has normally been made. It is doubtless felt that any abuse of monopoly power would lead to questions being asked in Parliament which might lead to a full-scale inquiry. At the least the Government would ask for information from the monopolists concerned "as a matter of courtesy" to enable Ministers to answer such questions. Allegations were made at the beginning of the 1939-45 war that production of cement was being held up by the Cement Manufacturers' Federation and information was asked for which would rebut or substantiate the charge. More recently public disquiet concerning monopolistic tendencies in the film industry led to an inquiry. No official action was taken, but certain assurances were given to the Government. In this country the control of monopoly chiefly depends on the fear of causing a scandal and the possibility of searching inquiry with full publicity. When action is taken as a result of such inquiry it is often in the form of a warning against further abuse of monopoly power and the seeking of assurances of proper conduct of the industry with due regard to the public interest. Because such

control is seemingly casual and informal it does not necessarily follow that it is less effective in preventing abuses than the setting up of formal machinery for the purpose.

But, as we have seen, where the Government is directly implicated in the establishment of a monopoly, some formal machinery is generally set up to safeguard the public interest in reasonable efficiency of production, adequacy of output, and fairness of prices. It is difficult to generalize concerning the efficiency or otherwise of the control machinery for this purpose. Each example should be assessed on its merits in the light of the circumstances in which it is forced to operate. But, generally speaking, the setting up of outside bodies of independent persons like the Railway Rates Tribunal, the Import Duties Advisory Committee, or the Committees of Investigation in the coal industry has not been a success. The I.D.A.C. had taken a hand in the formation, and had subsequently approved of, the organization, the results of which they were supposed to assess. Neither the I.D.A.C. nor the Committees of Investigation were sufficiently associated with the detailed day-to-day conduct of the industries concerned to form any proper appreciation of standards of efficiency. The latter in particular only came into action when a specific complaint was received and complaints were not always forthcoming if there were fears of later victimization by suppliers. There was frequently delay in the hearing of complaints and the onus of proof that prices were unreasonable (or that free access to particular suppliers was unjustifiably impeded) tended to be pushed off on to the complainants. This onus was extremely difficult to sustain since complainants would not have access to all the facts.

These outside bodies in practice are mainly concerned with the reasonableness of prices to the consumer. The difficulties of carrying out such a commission are obvious. Fair prices should obviously be based on costs of production, including allowance for a normal rate of profit. But on whose costs should prices be based—the most efficient firms, firms of average efficiency, or marginal firms? Whichever basis is adopted the problem of measuring the relative efficiency of firms remains, and the question then arises whether they are as efficient as they might be in the absence of monopoly. The

outside bodies are given very little guidance by the legislature to carry out their difficult task. Was it the function of the Railway Rates Tribunal to see that railway rates were fixed at such level that the companies would earn their standard revenue? Could such an attempt be made without so diverting traffic to the roads that the companies would be left worse off than they were before? Similar dilemmas faced the other bodies concerned. The Committees of Investigation were biased by the explicit intention of Parliament in passing the 1930 Coal Mines Act to place the coal industry in a position to extort higher prices from consumers. They could hardly object to any price which "the traffic would bear," and which coal-owners considered it in their own interests to charge, so long as particular consumers were not unfairly discriminated against. The I.D.A.C. was forced seriously to consider whether it should permit higher prices which would cover the costs of obsolete plants brought into production to meet an increase in demand. If they did not they might be accused of causing a steel shortage, and if they did so they might be accused of permitting more efficient firms, already working to capacity at a fair profit, of earning extortionate profits. The most that could be said for these outside bodies was that they checked flagrant abuses and safeguarded particular consumers against grossly unfair discrimination. But there can be no doubt that, despite their existence, particular firms made a very good thing out of their monopoly position and that practically nothing was done to ensure proper standards of efficiency.

The gas industry affords an interesting example of an effort on the part of the State to prevent monopoly abuses by providing specifically by statute for price regulation and profit limitation as an alternative to the outside supervisory body. These efforts also provide a further illustration of the difficulties of statutory price regulation as a curb to monopoly power. By the Clauses Act of 1847 gas company dividends were limited to 10 per cent per annum. This was a high rate because gas supply was considered to be a risky business and the rate had soon to be reduced as the industry established itself more firmly. But it soon became obvious that this provided little protection for consumers unless restrictions were placed on the issue of new capital and the accumulation of reserves.

To make control more effective, maximum dividend provisions were frequently backed up by the prescription of a maximum price for gas. But as technique improved and the scale of operations increased, the cost of gas-making declined and the prescribed price was compatible with the earning of very high profits. Also no incentive was provided by such a system of control for companies to increase their efficiency. After 1875 sliding-scale arrangements became increasingly common. A standard price and a standard dividend were laid down with the proviso that when prices fell below the standard price, dividends might be raised and vice versa. This arrangement also was soon shown to be defective in periods of falling cost due to a fall in the general price level, increased profits being paid out which bore no relation to any increase in the efficiency of management. During the 1914-18 war as costs and the general price level rose steeply the dividends paid out to shareholders fell almost to vanishing point. After 1918 a more complex system of price control was adopted on a wide scale which provided for a minimum basic dividend and a basic price. A proportion of any difference between total revenue collected and what would have been collected had the basic price been charged could be allocated in equal amounts between shareholders (in the form of extra dividends) and employees (in the form of bonuses). This system provided a greater incentive to efficiency and also permitted the companies to pursue more flexible price policies.¹

For the moment these arrangements, though complex, appear to be fairly satisfactory, though certain other loopholes had to be closed if consumers were to be adequately protected. They had to be safeguarded against the supply of inferior gas, minimum pressures had to be prescribed, and gas companies had to be forced to supply all potential consumers, for otherwise companies might seek to lower costs by refusing to supply consumers whose demand was likely to be small.

There is probably no simple method of controlling monopoly which will provide sufficient incentives for private enterprise

¹ When maximum prices had been prescribed under previous arrangements, companies generally felt themselves to be debarred from selling gas at low prices for certain special purposes which would permit gas to compete effectively with other fuels and enable companies to tap a very much increased demand.

to achieve maximum efficiency and protect consumers against exploitation. Yet the dangers inherent in monopoly cannot be permitted to debar society from reaping the maximum economies of scale which may only be possible if the building up of strong monopoly positions is tolerated. Absolute prohibition is therefore undesirable and probably impracticable. Indirect methods of control are generally uncertain in their effects, complex and cumbrous in operation, and may often involve graver disadvantages than the evils they are supposed to eradicate. In some industries the most theoretically attractive solution is undoubtedly for the State to supersede private enterprise in greater or less degree.

4. CONCENTRATION OF CONTROL

The case for supersession of private enterprise is enhanced by the growing concentration of economic power and divorce of ownership from control in modern industry. We have already noted how the joint-stock company form of organization has facilitated the building up of large industrial units subject to common control. A single individual or small group of individuals may fairly easily acquire control of a large group of associated undertakings in which they possess a very small proportion of the stock. The same persons may be on the Board of Directors of each of the associated firms and draw directors' fees from each. It has been estimated that some 2000 directors managed the 100 largest non-banking corporations in the U.S.A. in 1929 and that these corporations controlled about half of all the non-banking corporate wealth of the country. It is a mistake to imagine that effective control is necessarily associated with possession of more than 50 per cent of the voting share capital. Management is frequently vested in small groups which own a very small proportion of the ordinary capital. These groups nominate the directors whose position can rarely be effectively threatened by the general body of shareholders. The ownership of shares is normally widely dispersed¹ and the average shareholder takes

¹ Particulars collected in respect of ten large and widely representative groups in British industry show that over 87 per cent of the shareholders held less than 500 shares and over 41 per cent held less than 100 shares. *Vide* Report of Committee on Company Law Amendment (Cmnd. 6659), 1945, page 77.

little interest in the conduct of the firm's affairs. It is extremely difficult to get together a sufficient body of ordinary shareholders to unseat the Board of Directors at an annual meeting. Meetings may be called at short notice and shareholders with a small stake in the firm are unlikely to face the expense and inconvenience of attending. If a revolt of shareholders is being organized and action appears imminent, the Board of Directors may try to obtain sufficient proxies to enable them to outvote the opposition. Moreover, when business policy is debated at the general meeting only the directors have full access to the facts. With the excuse of having to maintain business secrecy they may refuse to divulge relevant facts and many shareholders can be excused for feeling that they have no alternative but to trust their directors and pass a vote of confidence in them. In this way Boards of Directors may become virtually self-perpetuating and so wield a power out of all proportion to their actual holdings in the companies concerned. This process has probably gone farther in the U.S.A. than in this country, but a similar trend is noticeable in most countries which are advanced industrially. In 155 of the largest corporations in the U.S.A. in 1935 the median percentage stockholding by total management was 1.74 per cent and the arithmetic mean holding was only 5.52 per cent.¹

The consequence of such developments may be rather serious. A limited number of individuals may acquire sufficient economic power to exercise considerable political influence and so undermine democratic government. They may control important sources of publicity and be able to influence public opinion unduly. They may produce an economic crisis and unseat a government by refusing to give employment or maintain investment. In time of war they may be able to hold the community up to ransom and in time of peace may be able to decide important issues of social policy.

In the economic sphere such developments may introduce a quite unwelcome degree of irresponsibility into management.

¹ R. A. Gordon, *ibid*, page 24. In calling attention to some of the ways in which management sometimes dissociates itself from ownership, some divergence of interest and mutual lack of confidence is also implied. It needs to be emphasized, therefore, that these illustrations of an important trend should not be taken as reflections of what generally happens in practice in this country. At present we lack sufficient detailed knowledge to permit much generalization in this field.

The directors of any particular company may pay little attention to the interests of the general body of shareholders. Goods produced by the company may be sold at less than cost to other companies in which the directors are interested. There are many other ways in which the interests of a particular firm may be subordinated to the outside interests of the management group. The firm may be used to break down, at heavy loss to itself, the resistance of another firm over which the group desires to extend its control. The firm's policy in respect of dividends may be dictated by a desire to strengthen the group's control, to favour particular groups of shareholders, or to "rig" the stock market.

These considerations, in addition to the difficulties of indirect external control of monopoly power, have given a great deal of impetus to the demand for wide extensions of the principle of public ownership of industry. Obviously the case for nationalization is much stronger where, in addition, special technical considerations apply—as in transport, public utilities, and, to a lesser degree perhaps, in coal-mining. Most of these industries are now within the sphere of public enterprise, or appear likely to be in the very near future. It remains to be seen whether the State will supplant private enterprise on any considerable scale in the general run of manufacturing industries.

APPENDIX TO CHAPTER VI

Public Enterprise and Nationalization

MANY advantages are claimed for public enterprise.¹ Labour feels that the danger of exploitation for the capitalist's private profit is removed thereby and although labour may not be directly associated with management it can claim some voice in the running of nationalized industries by virtue of its rights of citizenship. Ownership and control are both vested in the State or some public body and some, at any rate, of the dangers of concentration of economic power are lessened. All the technical advantages of unified control and large-scale operation are made available, and if consumers are exploited they can comfort themselves with the reflection that their loss is the community's gain. The State can afford to take very long views in planning future development and in conserving wasting assets and can face short period losses with greater equanimity than the strongest private firm. It may be able to purchase ability more easily and cheaply than private enterprise because it can offer security and the ideal of public service to able and upright men. Also the State will consider social costs when considering the pros and cons of specific projects and will be enabled to plan more efficiently the location of industry, the growth of new towns, and the preservation of amenities. Moreover, it may be argued that the sphere of public enterprise will need to be enlarged if the State is to discharge its responsibility for securing full employment and a greater measure of economic stability in the future.²

The arguments against public enterprise, particularly in its full nationalization form,³ are not, however, to be lightly dismissed. Red tape and bureaucratic control by the Civil Service may stifle initiative, increase administrative costs, place technical skill and experience at a discount, and exasperate consumers. The traditional virtues of the Civil Service—attention to detail, caution, and integrity—are not those which often show up to best advantage in the conduct of business enterprise. There is also to be considered the possible effects of the "dead hand of the Exchequer." The main function of the Treasury has always been to keep public expenditure down to the minimum and to insist upon a strict accounting for every penny spent. Many new capital development projects which would commend themselves to business men would

¹ The following short résumé of these advantages should be considered in the light of the criticisms of private enterprise and its functioning which have been previously advanced.

² Cf. White Paper on Employment Policy. Cmd. 6527, 1944.

³ See page 120.

probably be regarded by the Treasury as sheerest gambling with the tax-payers' money. The Government might also hesitate to take legitimate business risks with elections in the offing and would constantly be subject to political pressure for improved services at reduced rates and better working conditions. The possible intrusion of politics into the day-to-day conduct of the affairs of an industry introduces serious dangers into public enterprise. Necessary schemes for technological rationalization may be held up because organized labour fears displacement of labour by the new machines. Schemes for the concentration of production may be discarded because certain townships will be adversely affected, and labour may have to travel longer distances to work. The State may also prove to be more vulnerable to criticism than private enterprise. The private employer could pin most of the responsibility for unpopular Acts on to market conditions. With widespread public enterprise the State will less easily escape criticism since market conditions will largely be the direct outcome of State activity—or inactivity.

There are other arguments against public enterprise which also need to be considered. Some alarm has been felt at the possible threats to economic and political freedom implied by further growth of State economic activity. In a fully socialized economy consumers may no longer be able to dictate the volume and types of goods produced. As sole employer, the Government of the day would be in a strong position to influence opinion and penalize political groups antagonistic to it. The legislative machinery of the State may not be able to stand up to the strain imposed upon it, and democratic procedures may be slowly undermined. There is also the possibility that productivity will fall. The spur to efficiency provided by private profit making will be removed and, since the State is likely to be less ruthless than the private employer, industrial discipline may be weakened.

These are some of the more important arguments for and against public enterprise. It is impossible to say without considering the merits of individual cases where the balance of advantage lies. Where the tendency to monopoly is strong, where private ownership is clearly seen to be an impediment to full technical efficiency, where the business is one which can be readily reduced to routine, and where a protected market exhibits a steady demand to be catered for, then the case for public enterprise is very difficult to gainsay. But where a premium is placed on flexibility, inventiveness, enterprise, and variety by reason of variability of demand, the nature of the products, or foreign competition, the case is correspondingly weakened.

In any case much will depend on the form which public enterprise takes. It is not always easy to decide where private enterprise ends and public enterprise begins. Nor is the word "nationalization," which is so frequently used in the latter connection, susceptible

of close definition. Public enterprise would seem necessarily to involve State¹ ownership of the industrial assets concerned. This does not take us very far, but it obviously excludes any form of external control of private enterprise by the State. Thus, for example, the road passenger transport industry is closely controlled by the Road Traffic Acts, and much the same is true of the gas and electricity industries. This control may be fairly comprehensive and where price policy, profits, development policy, and quality of output are subject to regulation, there may be very little scope for *private* enterprise.² But (excluding the local authorities) these industries are still operated for private profit and, within the limits prescribed by statute, entrepreneurs will seek to maximize those profits. The engagement of labour, certain technical matters and many other aspects of industrial policy are still matters which the individual firm can decide for itself in its own interests. State ownership of part of the share capital of a firm³ equally does not constitute a case of public enterprise since it is not sole owner of the assets, and profit claims on the firm are possessed by private individuals who have a voice in management. State ownership of the entire share capital, however, would definitely involve a presumption of public enterprise.

Tentatively, then, we may say that public enterprise implies State ownership of the assets. From this it would seem to follow that public money should be at risk, that final authority for all decisions should reside in the State, and that all profits (or losses) should accrue to it. But it is still not clear what precise meaning we are to attach to the word "State" in this connection. When the ownership of assets is vested in the Crown and their operation is directed by a Minister responsible to Parliament (as in the case of the General Post Office) no difficulty arises. But more often than not in the United Kingdom extensions of public enterprise involve the establishment by statute of an *ad hoc* body in which the ownership of the assets is vested and which operates the assets on behalf of the State. But before this can be accepted as evidence of public enterprise many important questions need to be answered, e.g. how is this body appointed, to what extent is it independent, and to what extent is it responsible to a Minister who has overriding authority over it, how is it financed, etc.?

Some leading examples may be quoted to show the difficulty of making valid general statements. The Central Electricity Board (C.E.B.) was established by statute in 1926 to organize on a national basis the generation and transmission of electricity. The Board was

¹ This is intended to include the ownership of industrial assets by local authorities

² This may constitute an argument for supplanting private enterprise in these industries.

³ E.g. the British Government holds a large part of the share capital of the Anglo-Iranian Oil Co.

appointed by the Minister of Transport (now by the Minister of Fuel and Power) and a report is submitted annually to the Minister who presents it to Parliament. The Board finances itself by loans raised in the open market, but private stockholders have no voice in management. Moreover, the generating stations controlled by the Board remain in private ownership.¹ The British Broadcasting Corporation (B.B.C.) was incorporated by Royal Charter in 1926, and its Board of Governors is appointed by the Crown. The governors submit annual reports and accounts to the Postmaster-General, who lays them before Parliament. The Corporation is financed by part of the proceeds of licence revenue, the exact proportion being decided by the Government. The London Passenger Transport Board (L.P.T.B.) was established by statute in 1933 and its members are appointed by special appointing trustees. It acquired its assets for the most part by the issue in exchange of its own stock. Former owners of the assets, therefore, became stockholders without a voice in management, but in some cases they were given certain rights against the Board in the event of their interest claims not being met.²

Each of these large public corporations were endowed with considerable autonomy and freedom from Parliamentary control. No Minister considered himself responsible to Parliament for the operation of the assets concerned and (subject to certain special restrictions in particular cases) each corporation is perfectly free to formulate and carry out its own policy without interference from the State. In many other respects also, one or other of these corporations fails to fit our tentative definition of public enterprise. For example, finance may be raised from private sources or the assets controlled are (or may be deemed to be) in private ownership.

So called "Public Boards" (e.g. Port of London Authority, Metropolitan Water Board, Mersey Docks and Harbour Board, etc.) have also to be considered in this connection. They are generally established by statute and are self-financing, non-profit-making bodies. Members of the Boards are generally representative of various interests by which they are appointed, e.g. port users, conservancy boards, or local authorities. Within the limits set by statute, these boards are fully autonomous and owe no responsibility to the State. Except in so far as local authorities are involved most of the hall-marks of public enterprise which we have set out above are absent. Yet the non-profit-making public board is clearly not to be confused with private enterprise, as when a railway company owns and controls a port. The railway company will be solely concerned with its own profits and may exclude competitors,

¹ By the Electricity Act of 1947 the assets of the C.E.B. and all power companies will be vested in the British Electricity Authority. See page 167.

² By the Transport Act of 1947 the assets of the L.P.T.B. were taken over by the Transport Commission on 1st January, 1948. See page 166.

whereas the public board will encourage maximum use of the port facilities.

Since 1945 there have been considerable extensions of public enterprise, most of which differ significantly from the examples previously given. The State has acquired the entire stock of the Bank of England, so that the State has now the absolute right to nominate the Governor and Directors and, moreover, the Government can override the Court of Governors by the issue of specific directions when it thinks fit. The State has also acquired the entire share capital of Cable and Wireless Ltd., which brings another service within the sphere of full public enterprise. Both the civil aviation and coal industries have been taken into public ownership, the assets being transferred to bodies specially created for this purpose. Members of these Boards¹ are to be appointed by a Minister of the Crown and, though they are to be free from interference in matters of routine management, the Ministers concerned retain overriding powers of control and direction on broad issues of policy and will definitely be held responsible to Parliament for the operation of the industries concerned. The civil aviation corporations will be financed by the issue of stock subject to Treasury consent, whereas it appears for the most part that the National Coal Board will be financed directly by the Treasury.²

In the light of these examples it seems reasonable to use the words "public enterprises" in a general sense and to attach a more specific and limited meaning to the word "nationalization."

The former may be applied to municipally owned and controlled concerns and (with some hesitation) to all public boards and corporations. The latter is best reserved for cases where the entire assets of an industry (on a national scale) are owned and controlled by the State or some State appointed body responsible to a Minister of the Crown, who possesses final authority. It should also imply that the Treasury is directly responsible for the financing of the industry and that the State assumes all risks, benefits, and obligations which normally appertain to the ordinary shareholder. State control of private enterprise, however comprehensive, and limited State participation in the equity of firms do not justify the use of either term.

The difficulties involved in the transfer of industries from the realm of private to that of public enterprise can only be briefly indicated here. They may be conveniently categorized as problems of administration, finance, and severance. The way in which these problems are tackled is of vital importance to the future of the

¹ The titles of the various instruments of public enterprise vary for no apparent reason. They may be Boards, Corporations, Commissions, or Authorities.

² Acts passed in 1947 provide for the public ownership of road and rail transport and the electricity industry. (See pages 166 and 167.) The Government has also announced its intention of taking similar steps with regard to the steel and gas industries.

industry concerned. Although a sound *prima facie* case for public enterprise may exist, the plan devised for giving effect to it may involve graver economic disadvantages than the continuance of private enterprise.

There are a great variety of administrative expedients for giving effect to public enterprise, all of which have their advantages and disadvantages and require to be judged in the light of particular circumstances. Direct operation of the industry by a Government Department would appear to maximize the possibility of that rigidity of management which we associate with bureaucratic procedure and over-indulgence in red tape. Policy is likely to be too much affected by personalities and the outcome of the Parliamentary struggle. Changes in the balance of political power and conflicting ideologies may hinder the formulation, and frustrate the implementation of, sound long-term policies. On the other hand it is important in a democracy that the principle of public accountability should be preserved in all spheres of public enterprise. On balance it would seem probable that whilst such an administrative set-up might work well enough with mainly routine services like the G.P.O. (or even central banking and transport) it is less likely to function successfully for most manufacturing and extractive industries.

As we have seen, bodies established for purposes of public enterprise are generally appointed by a Minister and are composed of independent persons, i.e. persons not representative of any particular interest. In some cases (e.g. the Governors of the B.B.C.) their responsibilities are general, but in other cases (e.g. the National Coal Board) each member may be responsible for some special aspect of administration, such as labour relations, technical matters, finance, etc. Where the Board is more or less autonomous, such autonomy may be criticized as undemocratic. It may be dangerous to hand over the control of basic services and industries to individuals without restriction of some sort. But the ideal of public service is strong in this country and the risk of abuse of power should not be exaggerated. It has not been difficult to attract able men to these positions, and it may be that the degree of independence which they enjoy has formed part of the attraction. The autonomous board has obvious advantages where initiative, bold planning, and speed of decision are important. It has been claimed for the public corporations created during the inter-war years that they combined the flexibility of private enterprise with all the advantages of unified public ownership, without suffering the more obvious disadvantages of either.

Where the Board is subject to the overriding authority of a Minister (e.g. The National Coal Board)¹ the principle of public

¹ This also applies to the Transport Commission and the British Electricity Authority which were set up in 1947 to administer the assets of the nationalized transport and electricity industries. See pages 166 and 167.

accountability is preserved and it may be argued that the Minister is in a better position than a specialist board to judge broadly the national interest. But there may be serious drawbacks similar to those of direct Civil Service administration. Ministers come and go, they may be drawn from different political parties, they may impose a policy on the Board without sufficient consideration of its expert views, they may expose it to the full blast of political controversy, and so on. A Labour Minister may find it difficult to resist pressure from his own party to slow down the pace of reorganization. The Board, on the other hand, may take refuge behind the powers and responsibilities of the Minister. In matters of long-term development policy the Board may leave the initiative to the Minister, whilst the Minister may leave it to the Board. These are merely possibilities, for much will depend on the personalities concerned.

Representative boards have not found much favour in this country and, in general, it would seem that the pull of conflicting interests might constitute a serious impediment to efficiency. There might, however, be some compensating advantages. If labour was directly represented this might result in more amicable industrial relations. Failing such representation, labour, in public enterprise industries, may choose to fight its battles in Parliament. Such a proceeding is likely to be a source of embarrassment to the Board and a constant source of friction between labour and management.

The financial problems involved in the transfer of industries from private to public enterprise are concerned mainly with the assessment of the amount of compensation to be paid, the form in which it is paid, and the arrangements for subsequent financing of the industry.

The soundest basis for valuing working industrial assets is undoubtedly that of capitalizing future profit-earning capacity, since fixed capital assets generally have no value (except as scrap) apart from their power to earn profits. But the difficulties involved in making such valuations are tremendous. Future profits will depend upon the operation of many factors, the future force of which cannot be foreseen. Any estimates can hardly claim to be based on anything other than intelligent guess-work. When such estimates have been made the number of years' purchase to be applied has to be decided. That is to say, the rate of interest at which expected future profits are to be capitalized must be determined. The uncertainties affecting future profits can be reduced if estimates are made for the industry as a whole rather than individual firms. This method of making a global valuation of the entire industry was employed when the coal industry was nationalized in 1946. This was followed by uniform valuation of individual firms for the purpose of arriving at proportionate shares of the global sum and not for determining absolute amounts of compensation payable to firms. Future profits were apparently estimated on the basis of average earnings over a past

period, any uncertainty as to the probability of such profits continuing in the future being reflected in the number of years' purchase applied.

The amount of compensation may be based on market valuation of share capital. This obviously cannot be employed in all cases (e.g. where private companies are being taken into public ownership), but it was used in connection with the acquisition of the Bank of England by the State in 1945, and is the method proposed for the acquisition of railway undertakings by the Transport Bill (providing for the nationalization of surface transport in Great Britain) which was introduced into Parliament in 1946.¹ The justification for this procedure is that share values are adjusted to future profit expectations in the course of trading. It is, however, open to serious criticism. Share market values are affected by many considerations other than the expectation of future profits. For example, share values will be depressed if the directors consistently allocate considerable sums to reserve and pay lower dividends than are actually earned; transactions in a particular category of share may be so limited over a given period that the price quoted may have little meaning; buyers of stocks and shares are not gifted with perfect or even expert knowledge and are often affected by the vaguest rumours or the political situation; share prices may be affected by purely temporary speculative movements, and so on. Clearly the force of these considerations will vary very much from one case to another. Central banking requires few capital assets and may be regarded as practically riskless. Also the Bank of England for many years has pursued a policy of paying uniform dividends which, failing a major disturbance, might reasonably be expected to continue indefinitely. Its stock would, therefore, be regarded as a gilt-edged security comparable with Government stock. Stockholders being paid a sum in Government stock equivalent to its market price would obtain a Government guaranteed income practically equivalent to the income previously enjoyed. Railway shareholders would, however, be in a different position. Assuming that the price of railway shares accurately reflected the value of the assets concerned on the basis of reasonable and expert expectations of future profits, there would still be a considerable risk element involved which would lower the price and raise the yield of the shares compared with Government stock.² If the amount of compensation payable in Government stock was based on these share prices, the railway shareholder would still suffer a fall in income. This would be reasonable having regard to the fact that the income from Government securities was comparatively riskless, but, since the exchange would be compulsory, the process might appear to involve an element of expropriation to the individuals concerned.

¹ This Bill received the Royal Assent in August, 1947.

² This consideration would not apply with equal force to Debenture, Preference, and Guaranteed Stock

A third possible basis for compensation assessment is that of original replacement cost. There are several variations of this method. Under the Transport Bill, for example, it is proposed to fix compensation for road vehicles on the cost of replacing them with new vehicles of a similar type, less depreciation at 20 per cent per annum of life. Privately owned railway wagons, on the other hand, are to be acquired on the basis of original cost, less depreciation.¹ Once again the merits of these methods depend very much on the particular cases to which they are applied but, in general, the procedure bristles with difficulties. New vehicles of similar type may, in fact, be very different because of technological advances. The original cost of assets may not reflect their present value because of a general movement of prices, or they may have become fixed in use, in which case their value would not necessarily be reflected by original cost or present replacement cost.

Compensation may be paid in the form of cash, Government stock, and stock issued by the body in which the assets have been vested. In the latter case, interest on the stock would be a charge on the revenues of the Board, though its payment might be guaranteed by the Treasury. The stockholders would have no voice in management and accordingly it might be expected that stock would bear a fixed rate of interest, although this was not the case with one category of L.P.T.B. stock. Where this method of payment is employed there is often serious risk of over-capitalization. Since the Board is paying with its own paper it might seem less important to keep down the amount of compensation paid, though this would be less likely to happen if interest was guaranteed by the State. Where there is no such guarantee the question arises as to what rights the stockholder will possess against the Board in the event of the interest not being paid. To take the extreme case, if no interest were paid the compensation stock would become worthless and the former owners of the assets would, in effect, have been expropriated. Some safeguard there must be, and for it to be effective it must be sufficient to make payment of interest in full a primary consideration to the board. The latter may, therefore, be ultra-cautious in their administration of the assets, and the fortunes of the nationalized industry may be adversely affected thereby. There is a great deal to be said for payment in cash or (which amounts to the same thing) negotiable Government stock. The State then becomes sole proprietor, sole risk-taker, sole decision-maker, and sole profit-taker.² This is as it should be, since the fortunes of private individuals should not be affected by the experience of a concern without possessing a voice in its management. The Government stock to be issued in payment for colliery assets

¹ The Bill was subsequently amended in this respect. The above basis of compensation was replaced by a schedule of purchase prices according to type and date of construction.

² Assuming that new capital is provided by the State.

transferred to the National Coal Board is exceptional in that it will be inalienable except in certain contingencies. This is presumably done to avoid inflationary risks or stock market disturbances which might result from such a large distribution of cash or marketable securities. This would seem to involve some penalization of former owners of the assets since they will have been compelled to exchange saleable assets for unsaleable stock of equivalent nominal value.

The provision of new capital on satisfactory terms and in adequate amounts may be vital to the success of the nationalized industry. If recourse has to be made to the open market (as in the case of the C.E.B.) this may be difficult at times when the money is required and the Board may find itself burdened with very heavy fixed interest commitments long before new development projects can be expected to show much return. In general it would appear to be sounder policy for the State to provide any new capital required on flexible terms, having regard to the purposes for which the money is required. The State, in other words, should be prepared to assume the role of ordinary shareholder. This would appear to be roughly the position under the Coal Mines Nationalization Act of 1946.

When an industry is to be taken into public ownership its limits will need to be carefully defined. Processes relating to various industries may be operated by the same firm and (which is more important) they may be physically integrated in such a way that they cannot be kept distinct for operational purposes without introducing serious diseconomies. It is true that separation of ownership would not necessarily imply physical severance, but dual control of integrated plants would probably involve much friction and increased administrative costs. The alternative would be to take over all the assets of firms operating closely integrated plants, with the result that in the process of nationalizing industry "A" a considerable sector of industry "B" might also have to be nationalized. Problems of severance are likely to loom large when the projected nationalization of the primary branches of the steel industry is put into effect. It may also be presumed that they constituted a major obstacle to the drafting of the Coal Mines Nationalization Act.

CHAPTER VII

Location of Industry

I. INTRODUCTION

THE factors determining industrial location are extremely diverse and vary a great deal in the course of time. This may account in part for the fact that there is no generally accepted theory of location¹ in the sense of a formalization of the principles according to which new enterprises locate themselves. Another reason may be that until recent years conventional economic theory was mainly concerned with the organization for production of a given aggregate of resources, and the distribution of the product resulting therefrom, under conditions of perfect competition. Within each market, about the possible limits of which little or nothing was said, transport costs were necessarily assumed to be non-existent. It was not surprising that economic theorists who were for the most part preoccupied with the economic problems of a timeless, frictionless, and spaceless world should have very little to say on the subject of the location of industry. We can, however, obtain considerable insight into these problems by listing what appear, in the light of empirical investigation and direct observation, to be the main factors involved and their relative strength in various sets of circumstances. But such a list could hardly be exhaustive since we often lack sufficiently detailed information on the motives which have impelled business men to set up their establishments in certain areas. This is particularly true when the relevant decisions were taken many years ago. For an individual firm a factor which, in general, seems to be of little account may assume overwhelming importance and a complete list of all such factors would be almost impossible to compile. With the exception of certain big firms it is comparatively rare for a scientific study of the merits of alternative sites to be made before production is embarked upon. Even when such a study has

¹ Alfred Weber's *Theory of Location of Industries* (English edition by C. J. Friedrich, University of Chicago, 1929) is perhaps the most noteworthy effort to provide such a theory.

been made, more than one optimum site might be indicated and the final choice may be determined by some quite trivial consideration. It is inevitable, therefore, that in a short account the choice of relevant factors should be rather arbitrary and that the discussion should be based as much on surmise as definite knowledge of the facts.

Any theory of location is necessarily confined to the principles governing the location of new businesses at the time when it was formulated. But the present geographical set-up of industry is largely the outcome of decisions taken in the distant past. The application of such a theory to a given historical situation could hardly be expected to produce satisfactory results. A large part of the explanation of the existing location of industry is summed up in the term "industrial inertia." An industry is known or surmised to have established itself in a given area for this or that reason. Often it is still there because it is considered impracticable and uneconomic to move it. In spite of its accrued advantages (e.g. the traditional skill of the local population in the processes concerned) it may be quite clear that if the industry were being newly established it could be more profitably settled elsewhere. It is easy to see why the industry remains where it is. In most cases no one person can expect to affect perceptibly the location of an industry but there may be compelling reasons why all the firms should be located in close proximity to each other.¹ In spite of the advantages of a new site for the group as a whole, when a new factory is being built (or an existing factory being extensively modernized and reconstructed) the balance of advantage for the single entrepreneur concerned will probably rest with a site in or near the traditional home of the industry.

The factors governing the location of new enterprises to-day will not necessarily apply at all, or with the same effect, to-morrow.² Fear of war undoubtedly affected the choice of site for some new businesses prior to 1939, but at the present time this factor probably accounts for very little or nothing.

¹ See page 134.

² After the 1939-45 war, many firms were influenced into moving away from old-established centres of their particular line of production by labour shortage. This was a time of full employment and this undoubtedly increased the influence of labour factors on location.

A factory may be established in a certain district to take advantage of a cheap local supply of coke-oven gas. In a few years' time the coke ovens may close down, but the factory remains. Where so much is uncertain and unpredictable it is not surprising that the location of industrial establishments should be decided so frequently by rule of thumb methods.

In recent years the problems associated with industrial location have received closer attention and aroused more widespread interest than ever before. There are particular reasons for this which will be mentioned later in this chapter. But in general there can be little doubt that this is due to the changing position and functions of the State in relation to the economic system, the growing disposition to look beyond narrow profit and loss considerations to the broader welfare aspects of the functioning of the economic system, and the consequent demand for more conscious economic planning at the highest national level. When it was considered that the proper business of the State was merely to hold the ring for private enterprise, the problem of industrial location settled itself and aroused little speculation. That is to say, each entrepreneur set up in business on that available site which suited best his convenience and his pocket. What was in the best interests of each entrepreneur was considered to be in the best interests of the community as a whole. But nowadays no such easy assumption is made. To give but one example: the State is involved in heavy expenditure designed to protect the living standards and general welfare of its citizens. Education, housing, unemployment, and public health, have become heavy charges on the Exchequer and the State cannot remain indifferent to decisions taken by entrepreneurs which may be in their interests but which may involve it in considerable additional expenditure. A decision to locate a new large factory in a particular place may necessitate new roads, schools, etc., whilst in other areas people are unemployed and schools become redundant. Moreover, the State is in a stronger position than formerly to affect the location of industry. It is a considerable consumer of goods produced by private enterprise, it is in business on its own account, it can easily influence the decisions of public boards, corporations, and local authorities, and by its control of tariff policy can influence the decisions of private

enterprise. The result is that more thought is likely to be taken on these matters than if the State was powerless to affect the location of industry short of decisive legislative action. Direct intervention in this field was rare before the war. The location of certain privately owned aircraft factories is thought to have been influenced by the Government of the day, but these were rather exceptional instances because strategic considerations were dominant. Otherwise the most prominent example of intervention occurred with a new plant which Richard Thomas & Co. decided to erect in 1936. After careful consideration a site in Lincolnshire was decided upon as being the most economic, but pressure by the Government resulted in a far less suitable site in the distressed area of South Wales being chosen.

2. THE HISTORICAL FACTOR

Prior to the industrial revolution, industry in this country was widely dispersed. A particular activity was taken up because it was technically and economically feasible and because the local inhabitants needed to work in order to live. Technical and transport conditions enforced a great deal of local self-sufficiency, and the location of industry aroused little curiosity and did not constitute any sort of problem. The revolution in the technical methods which took place during the eighteenth and nineteenth centuries placed a premium on large-scale factory production and the transport revolution made economically possible the concentration of production in relatively small areas. Which of all the available sites were chosen for concentration appears to have been in many cases a matter of accidental circumstance rather than deliberate choice based on relative economic advantages. The cotton industry centred itself in Lancashire, the woollen industry in Yorkshire, the linen industry in Ulster, and the pottery industry in Staffordshire. In each case it is easy to single out possible influences in the choice of these particular areas but rarely do they add up to a convincing explanation. We hear a great deal for example, about the advantages of the Lancashire climate for cotton manufacture and the importance of a local supply of flax in Ulster. The facts appear to be that the Lancashire climate is not unique and that Ulster

is not particularly good flax-growing country. The fact that foreign refugees skilled in textile crafts settled in both these areas may explain more satisfactorily why these industries first developed and later concentrated there.¹ But we are then left wondering why the refugees settled where they did. Once again more or less convincing reasons suggest themselves which we need not go into here. At any rate it is clear that they had to settle somewhere and these places, it must be presumed, seemed to be as good as any of the other possibilities. But we are now far away from any question of balancing economic advantages of alternative sites. The genius of certain employers in the pottery industry may well have been the most powerful factor influencing its concentration in Staffordshire. All this suggests the importance of what may be termed accidental historical circumstances (as opposed to economic factors) in the determination of the present location of industry, and also the dangers of *post hoc* reasoning in this connection. When an industry is known to have concentrated in a particular area it is always easy to discover natural advantages attaching to the site. Even if the selection was purely fortuitous it is most unlikely that the worst possible site or one completely lacking in natural advantages would be hit upon. Also it is important to remember that a free choice of site is never available and many of the best sites for a particular purpose may already be in use for other activities. Even if not in use they may be occupied by derelict factories, abandoned workings, or old refuse heaps. One of the great difficulties of attracting industry to the distressed areas before the war was that available sites in thickly populated centres frequently needed to be cleared before new working operations could be started.

3. LOCAL AND EXTRACTIVE INDUSTRIES

Certain industries have remained widely dispersed and essentially local in character, for example the gas, electricity,

¹ The cotton industry "first settled in Lancashire for no particular reason except, perhaps, that the woollen industry was already there, that foreigners were kindly received and that Manchester was not a corporation." Quoted by Royal Commission on Distribution of the Industrial Population. Cmd. 6153 (1940), page 32.

and water supply industries, tramway and omnibus services, hotel, laundry, and catering trades, etc. The general characteristic of these industries is that they supply goods or services which must be supplied direct to the consumer in person or are uneconomic to transport over long distances. The economies of large-scale production of gas will be insufficient beyond a certain point to cover the additional cost of supplying distant consumers, particularly where consumers are widely dispersed in sparsely populated areas. Hotel services for obvious reasons must be fairly evenly spread over all existing centres of population. It should be noted, however, that these industries reflect to some extent the spread of the industrial population as a whole. If all the industries of Great Britain and the population who work in them are ultimately concentrated (say) within a radius of 40 miles from Charing Cross, these so-called localized industries will be largely concentrated within the same area. This is not likely to happen if only because one important branch of human economic activity—agriculture—is, in the present state of our technical knowledge, forced to spread itself pretty extensively over the country. So long as this is the case the localized industries also will be widely dispersed in order to meet the needs of the rural population.

The location of industries concerned with the extraction of raw materials such as coal, iron ore, bauxite, etc., are fixed within fairly narrow limits by natural conditions since the materials concerned can only be extracted where they are to be found. But too much should not be made of this. Where deposits are widely dispersed the location of the industry may be continually on the move away from areas where production has become uneconomic to more productive areas. New reserves may be discovered and affect the existing location of the industry, or technical advances may render workable reserves which had formerly been considered unworkable. At the present time the coal industry is tending to move away from Lancashire, Durham, Lanarkshire, and South Wales in the direction of Yorkshire, Nottinghamshire, Derbyshire, and Leicestershire. Similarly the iron ore industry is moving away from the coal fields towards Lincolnshire and Northamptonshire.

4. MAJOR ECONOMIC FACTORS BEARING
ON LOCATION

In so far as industrial location is governed by economic factors, transport costs are probably most influential. The costs which have to be considered comprise the cost of assembling the raw materials at the site and the cost of distributing the finished product to consumers. To find the best site a balance must be struck between conflicting considerations. If raw materials are bulky, heavy, and costly to transport, whilst the finished product is relatively compact, light, and cheap to transport, the balance of advantage will probably lie with a site near the source of the raw materials. This will tend to happen if the raw material loses a great deal of its weight in the process of manufacture, as occurs where coal is used in industrial processes to generate power. This explains the pulling power of the coalfields during the nineteenth century on other heavy industries using a great deal of coal. The traditional centres of British heavy industry are almost without exception to be found on, or in close proximity to, the coalfields. When more than one heavy and bulky raw material is used in a process, the greatest pulling power will be exerted by that material which loses most weight in manufacture, unless one of the other materials is used in much greater quantities. When the richest iron ores were to be found in the coalfields the manufacture of steel was naturally attracted there. But when the low grade ores of eastern England came to be worked the tendency was to locate new blast-furnaces there, since it would have been less economic to convey ore with a low iron content to the coalfield. Where they have become dependent upon imported ores the tendency has been for the blast-furnaces to move towards the coast.

When the finished product is bulky, perishable, fragile, or for any other reason expensive to transport, production will be attracted towards the market. This tendency will be emphasized if the raw materials are less costly to transport, are derived from diverse sources, and lose little weight in the process of manufacture. In the manufacture of biscuits, for example, fats, flour, sugar, etc., are not costly to carry in bulk, and coming from widely different sources unlikely to

attract production towards them. But the finished product needs to be specially packed and is fairly costly to transport in proportion to weight. But the pull of the market will depend very much upon its nature. If it is widely and evenly dispersed over the country it may still pay the manufacturer to produce near the source of the most important raw material since many sites may be equally convenient for supplying such a market. If economies of scale are not pronounced the result will probably be a number of production centres scattered over the country, each situated near some point of local market concentration. Because biscuits are in very general demand one might expect to find biscuit factories in or near every large town. If the bulk of the available market is concentrated in a narrow area the pull of the market is correspondingly increased, and the industry will probably be heavily concentrated in the vicinity.

On balancing these considerations there is always some point of minimum transport cost, though it may be difficult to ascertain it precisely by investigation. But production will not necessarily be centred at this point since for one reason or another the actual cost of production will vary between different possible sites. It is hardly to be expected that the point of minimum transport cost should also be the point of minimum production cost. It is the business of the entrepreneur to balance these factors against each other and try to find the site which offers him the maximum net advantage.

The influence of the transport factor is somewhat diminished by the practice of railway companies in charging lower rates for long hauls and for heavy, bulky materials. These low rates apply particularly to coal and industrial raw materials so that industry is less attracted to the source of these commodities. On the other hand the influence of transport costs in relation to marketing the finished product has been enhanced by the growing practice of charging uniform delivered prices rather than ex-works prices. This adds to the advantage of locating production as near as possible to the market for the product.

The increased flexibility and efficiency of modern forms of transport have enabled entrepreneurs to exercise a freer choice in the matter of location than in the past. It used to be true in many cases that a site had to be found on or very near to a railway line. Nowadays motor transport can be used in

outlying areas not served by the railways. This alone would hardly have sufficed to make the use of such sites possible if most factories had been forced to rely on coal as a source of heat and power, since coal is not economically conveyed by motor transport except over short distances. But with the advent of electricity a more flexible source of heat and power has become available. The new light industries which have been developing so rapidly in recent years have taken full advantage of these developments to establish themselves in places where industrial production could formerly have been carried on only under great difficulties. This has not meant, however, a wider dispersal of industry since nearness to markets has remained a considerable factor in the calculations of most entrepreneurs. In some ways it has even assisted the building up of larger concentrations of industry and industrial population, since new industries could now attach themselves at almost any point round such an area and not merely along the railway lines which serve it.

When an industry, or a major part of it, concentrates itself within a relatively small area, important advantages often accrue to it as a result of what have been called "economies of concentration." These consist for the most part of external economies which bind individual firms more closely to the industrial group of which they form part, although on other grounds a distant site might have considerable attractions for them. The sources of these economies are various. Important subsidiary industries develop in the vicinity which enable the main industry to satisfy its highly specialized needs more easily and cheaply. The development of marine engineering on the Clyde and textile engineering in Lancashire are cases in point. The close proximity of the Liverpool Cotton Exchange,¹ and cotton spinning, weaving, and finishing establishments in Lancashire, confers advantages on firms engaged in each section of the industry. The cotton spinner is enabled to purchase the right amounts and qualities of the cotton he requires at little risk and finds a market for his products on his own doorstep. The subsidiary industries also find it profitable to establish

¹ The Liverpool Cotton Exchange is now closed. By the Cotton (Centralized Buying) Act of 1947, the Raw Cotton Commission has a monopoly of buying, importing, and distributing raw cotton in this country.

themselves in the area in which the main industry is concentrated. Textile engineering firms in Lancashire not only find a ready local market for their products but are placed in close contact with the manufacturers and their technical problems. In this way the designing of new and better machinery is facilitated. A similar example is provided by the port of London, which, as it developed its extensive harbour and shipping facilities, naturally became the centre of flourishing ship-repairing and grain-milling activities. These activities in their turn enhanced the importance and profitability of the port facilities.

When a number of firms engaged in the same industry are concentrated together, the setting up of joint research institutions becomes more feasible and economical. Local educational and training facilities are often given a bias with a view to meeting the needs of the major industry. Also the surrounding population adapts itself to the industrial processes involved and develops a traditional skill which could not be found elsewhere. The Staffordshire pottery industry would hardly have retained its present location but for this factor. In many other cases, too (the shipbuilding industry in Northern Ireland for example), it is easy to see the many disadvantages of the location and not easy to see any compensating advantages except for the local supply of skilled labour that has grown up in the course of years.¹

Moreover as an area grows under the impact of these economies of concentration it becomes more important as a market for various types of consumers' goods, and, as we have seen, in recent years the market has exercised a considerable attraction for light industries. The larger the population becomes the greater are the demands made on public utility services and as these are extended and developed the industrial population concentrated in the area expands. Hospital and medical services are developed, universities are established, and in these and many other ways the area becomes an attractive one in which to live and work. From some points of view it is difficult to see why, once such a process of concentration proceeds beyond a certain point, it should ever stop.

¹ Account has also to be taken in this connection of the existence of specialized and not easily transferable capital equipment.

The importance of labour supply as an influence affecting the location of industry is difficult to assess. An industry may establish itself in a particular area because labour is available. Many examples can be found of industrial activities first being embarked upon in rural areas because of the need to find alternative or supplementary employment for workers who have been rendered wholly or partially redundant by developments in agriculture. But non-availability of local labour is not likely to prevent a site which has great natural advantages for some industry being developed for this purpose. Labour can nearly always be provided by immigration from other areas as was the case with the opening up of the South Wales coalfield. During the inter-war period the depressed areas never found it easy to attract new industry despite the existence of large numbers of unemployed persons with industrial experience. In so far as the labour factor affected location the supply aspect seems to have been comparatively unimportant. Unemployed men who had formerly belonged to militant trade unions were not looked upon with favour by industrialists who were thinking of starting new businesses in the area. It was feared that they might not be amenable to discipline, i.e. too much inclined to stand on their rights and over-ready to take strike action.

It sometimes happens that industry is attracted into comparatively undeveloped areas because labour can be obtained at lower wage rates. This factor is probably less important in these days of national agreements and minimum wages than it was before 1914. But even to-day it is alleged that "country" firms in the Ulster linen industry obtain a competitive advantage by paying lower wages than obtain elsewhere, and cases have occurred of firms moving out of central London to outlying towns such as Watford to reduce their wage bills.¹

5. SOME OTHER FACTORS

This short summary of the factors affecting the location of industry could be extended almost indefinitely. Where natural conditions, transport considerations, etc., do not decisively favour any particular site, the location of industrial enterprises

¹ P.E.P. *Report on the Location of Industry* (1939), page 67.

may be determined by the fact that entrepreneurs live in, or feel particular attachments for, certain places. This is more likely where a business is built up from small beginnings. It is natural that a small business should be established where the entrepreneur happens to live and that it should grow and develop on its original site. The fact that Oxford is now an important centre of the motor industry can be largely explained in this way, and much the same is true of York as a centre of the chocolate industry. Instances are not unknown of the state of health of an entrepreneur's wife or her social ambitions being a decisive factor in determining the site of a new business!

In these "marginal" cases all sorts of other considerations frequently assume great importance. The entrepreneur will need to consider whether an open site which does not need clearing or draining can be secured, whether transport and power facilities are not only available but also easily accessible, whether the climate and water supply are suitable, and whether any other factories are near at hand which are incompatible with his own line of business.¹ Also new industries may often establish themselves more readily in a particular area if suitable premises are available at a reasonable rent, which will preclude the necessity of having to build at great expense.² The trading estates set up in the Special Areas have sought to provide these facilities in an effort to attract new industries.

Financial influences are not likely to count for much in this connection though they have been heavily stressed by some writers. Capital is a highly mobile factor of production and if its services can be obtained it is likely to be equally available for use in any part of the country. But under certain special circumstances this factor may be important. The Government might influence the banks to withhold financial assistance unless the entrepreneurs concerned located their enterprises with due regard to the national interest. During the nineteen-thirties the opportunities provided for financing new industries through the Special Areas Reconstruction Association and the Nuffield Trust induced many entrepreneurs to chose a site in the distressed areas. These bodies took

¹ Thus, for example, a chocolate factory is unlikely to be established near a cement factory.

² Recent investigations suggest that, for light industries in particular, this factor is of greater importance than has been generally assumed.

advantage of the fact that relatively small amounts of capital for new business are difficult and expensive to raise. The prosperity of an area as reflected in the incomes of its inhabitants sometimes provides a financial incentive, of rather a different kind, to establish new undertakings there in view of the greater possibilities of finding more remunerative local markets than elsewhere. From this point of view an area which is depressed is more likely to repulse than attract new industry. It is possible that the decision to locate many new undertakings in the vicinity of the London area before the 1939-45 war was influenced much more by the demerits of operating in the distressed areas than by the intrinsic attractions of the site actually chosen. It has also been suggested¹ that rich backers of new enterprises often influence the choice of site by expressing a preference for some place near their homes in order that they might more easily supervise their investment. It is impossible to say how much importance should be attached to this in practice, but in so far as such motives have been operative in recent years they certainly would not work out to the advantage of areas badly hit by trade depression.

Although many of these subsidiary factors in industrial location are only likely to be important in particular cases it should be borne in mind that, as industry has become increasingly "fancy free" in its choice of site, considerations which might otherwise be thought rather trivial become increasingly relevant. Transport and power questions dominated the location of the older basic industries of this country. The more recently developed industries are normally faced with a wider choice of almost equally suitable sites. This, as we have already noted, has not resulted in industry becoming more widely dispersed as might have been expected. This suggests that what we have termed subsidiary factors have all tended to pull in the same direction.

This is to some extent illustrated by the increasing concentration of the industrial population in the London area² which, together with the concurrent decline in the older

¹ *Vide P.E.P. Report on the Location of Industry*, page 73.

² In 1937 the population estimated to be contained within a radius of 25 miles from Charing Cross was nearly ten millions.

centres of British industry, has been largely responsible for the greater interest now being taken in location problems. Concentration on such a scale has created serious social problems, and its strategic aspects in an age of air and atomic warfare have added to its seriousness. This has added considerable weight to the views of those who have urged more direct State interference with industrial location and a Royal Commission was set up in 1937 to investigate the problem and to make recommendations.¹

The growth of the London area admirably illustrates the working out of many of the factors in industrial location which have been outlined above. Its attractiveness as a site for new industrial establishments appears to have increased concurrently with its growth. Relatively to its size it undoubtedly forms the largest single market in the country for many types of commodities. It remained comparatively prosperous throughout the depression years, it constitutes the hub of the British transport system, it is the country's largest port, it possesses most, if not all, of the amenities of civilized life, and is the most important centre of fashion and political life. It is not surprising that it has exerted such a considerable influence on the distribution of industry and that it has expanded as rapidly as the older centres of industrial activity have declined.

There may be limits to this concentration process as far as individual entrepreneurs are concerned, though it may be doubted whether, in the absence of control, this limit has yet been reached. Wage rates are generally higher in London than elsewhere and land values are extremely high. But it is impossible to say at what point these additional costs will constitute a deterrent to further industrial development. It is unlikely that a point will be reached in the near future at which the problem could be left to solve itself. More serious are the social disadvantages of permitting further development—the strain and cost of travelling long distances to work, the inadequacy of open spaces and recreation facilities, growing traffic congestion, the unhealthy effects of noise, smoke, dirt, and overcrowding, etc. Increasing pressure is put upon the

¹ Royal Commission on the Distribution of the Industrial Population. This report is generally quoted as the Barlow Report.

State to improve transport facilities, and to provide additional schools and other communal facilities at a time when other built-up and fully developed areas are being denuded of their population.

6. STATE INTERVENTION

What, if any, steps should be taken to control industrial location cannot be fully gone into here, but some of the implications of interfering with the freedom of choice of private enterprise need to be noted. The State by taking action on social grounds may inhibit new enterprise, undermine our competitive position in overseas markets and, perhaps, inflict losses which will necessarily be borne by private individuals and not by the State. The presumption is that entrepreneurs in general select those sites which will enable them to operate at lowest cost and maximize their profits. In so far as State intervention is considered necessary it can only result in the forced adoption by entrepreneurs of less profitable sites. Compensation for loss is hardly practicable since it would be impossible to ascertain what part of trading losses is due to the location factor. This difficulty might be solved, and the case for the control of industrial location much strengthened, if all the products of industry were disposed of at home. Consumers could be expected to acquiesce in higher prices since they would reap greater, though less tangible, social benefits. But the difficulty of selling abroad would remain and, although this might not be insoluble, no obvious solution suggests itself.

It seems unlikely that the State could stop short at the purely negative action of prohibiting further development in certain areas. The difficulties mentioned above would still arise in some measure and private enterprise would need some assurance that the State was following some consistent and intelligible line of policy and that the plans of entrepreneurs would not be suddenly disrupted by the scheduling of more prohibited areas. So long as the British economy is based in the main on private enterprise the best approach to the problem would seem to be that the State, by positive action to influence the directional trend of social development, should make it worth the while of entrepreneurs to locate their establishments in one area rather than another. Each entrepreneur

would be left free in his choice of location but the game would be "rigged" by the State. Certain rules of the game would need to be observed. Direct financial inducements should be foresworn and action should be directed to maximizing the advantages of areas in which development is being encouraged rather than in maximizing the disadvantages of areas from which it is hoped to divert industry.

Minor actions, such as decentralization of the machinery of government, would be valuable aids in the implementation of such a policy but could hardly suffice to reverse present trends. To achieve its purpose the State would probably have to take the initiative in siting and developing new towns, and this in its turn would require careful planning of the use of land as a whole. So long as land remains in private ownership the thorny question of compensating private interests which are adversely affected by such development will need careful investigation, and the State will need to secure to itself any increments in land values (betterment) arising from its actions.

It remains to be seen whether action along these lines can be satisfactorily reconciled with the interests of private enterprise. The problem of controlling industrial location is in substance an aspect of the more general question of control of industry which was reviewed in Chapter VI. The satisfactory solution of these problems appears nearly always to point in the direction of further increase in the social and economic responsibilities of the State. It is difficult to resist the conclusion that we are being pushed slowly but inexorably towards a fully socialized and planned economy.

It will be convenient to summarize by way of conclusion the action taken by the State in this field in recent years. The Barlow Commission reported in favour of the redevelopment, decentralization, and dispersal of industry. A majority of the Commissioners reported in favour of the setting up of a National Industrial Board which would carry out research and advise on and regulate the location of industry. From the outset, the Board would be empowered to refuse permission for industrial undertakings to establish themselves in the London area, except where it could be proved that they could not be established on an economical basis elsewhere. The Board would also be required to report on any further powers which

would be necessary for it to carry out its functions of promoting a sounder geographical balance of industry. This report was signed subject to important reservations by several Commissioners, and an influential minority report was also submitted. The general tenor of these reservations and the Minority Report was to the effect that the proposed machinery was inadequate for the purpose prescribed, that positive as well as negative powers covering the whole country to direct industry were necessary, and that the controlling authority should be empowered to offer special facilities and financial inducements where further development was necessary.

The outbreak of war made it impracticable to take any action on the basis of the Barlow Report, but two special Committees were set up to investigate certain special problems raised by it. The Uthwatt Committee¹ was set up to consider the subject of the payment of compensation and recovery of betterment in respect of public control of the use of land, and the Scott Committee² to consider the redevelopment and dispersal of industry in relation to the maintenance of agriculture, the well-being of rural communities, and the preservation of rural amenities. The former recommended³ that the State should acquire the development rights of all land outside built-up areas (on payment of compensation) which would enable it to prohibit development without the consent of the planning authority. The State would have compulsory powers of acquiring the land itself when wanted for public purposes or approved private development. The Committee further recommended that public authorities should have wider powers of land purchase in urban (built-up) areas and recommended a simpler procedure for public acquisition. This left the compensation-betterment problem largely unsolved for urban land, but it was hoped that it would be mitigated over time by piecemeal public acquisition. The Scott Committee⁴ did not regard the diffusion of industry into rural areas as being either

¹ Final Report, 1942, Cmd. 6386.

² Report, 1942, Cmd. 6378.

³ The committee expressed the opinion that public ownership of all land would be the logical solution of the compensation-betterment problem, but rejected this as controversial, costly, and administratively complicated. Cmd. 6386, page 27.

⁴ An extremely able Minority Report was submitted by Professor S. R. Dennison, who dissented strongly from the views of the majority.

necessary or desirable, the well-being of rural communities being sufficiently provided for by a healthy and well-balanced agriculture. When light industries are brought into rural areas they should be located in small towns rather than in villages or the open country-side, and before any new towns are established in country areas, vacant and derelict sites in existing towns should be utilized. Furthermore, the Committee recommended that the central planning authority should place on the would-be developer the onus of proving that a non-agricultural use of land was desirable and that the Ministry of Agriculture should approve planning schemes involving the use of agricultural land.

It is not possible to comment on these reports in detail. The important point in the present context is that they show considerable unanimity in favour of central planning of the use of land, the controlled location of industry, and extension of public ownership of (or the development rights in) land. There can be little doubt that this will be the general drift of future legislative action in this field.

So far progress has been somewhat patchy. Very little could be done whilst the war continued, although by the Town and Country Planning Act (1943), the whole of the country was brought under planning control.¹ The Distribution of Industry Act of 1945 carried things a stage farther. Its main purpose was to promote a more balanced and diversified industrial development in areas exceptionally liable to heavy unemployment—formerly known as Special or Depressed Areas and now renamed Development Areas. Certain areas were scheduled in the Act, but the Board of Trade was empowered to add or subtract from the list of Development Areas. In these areas the Board of Trade may acquire land for the building of factories or itself build factories, and make loans to non-profit-making trading estate companies. The Treasury was also empowered to give financial assistance to individuals proposing to carry on undertakings in a Development Area. This Act, however, was considerably weakened by the deletion of a clause from the original Bill which would have empowered²

¹ The Town and Country Planning Act of 1944 facilitated the public acquisition of land, particularly in war-damaged and slum areas.

² Subject to an affirmative resolution of Parliament in respect of each area scheduled.

the Board of Trade to schedule areas in which further development would be prohibited. The New Towns Act of 1946 provides for the setting up of *ad hoc* Public Development Corporations, which will be responsible for building up new towns which would hope to attract industry and population from overcrowded areas. The Corporations will have authority to acquire, hold, manage, and dispose of land and to carry out building and public utility operations necessary for the setting up of the new towns. The capital expenditure of the Corporations will be met by the Exchequer.¹

The effectiveness of this legislation remains to be seen, but it seems fairly certain that in future the State will exercise greater influence over industrial location than ever before. How far private enterprise will become subject to positive direction, and how far private enterprise itself will survive the present phase of national economic policy, are questions about which it would be difficult and dangerous to prophesy.

¹ The Town and Country Planning Bill introduced into Parliament in December, 1946, proposes to vest all land development rights in the State. It provides that no development of, or change in the use of, land shall be undertaken without permission of the local planning authority or the Minister. On development, the State will levy a development charge on the increase in the value of the land. The Bill provides for the payment of compensation in respect of existing development values subject to a global maximum. The Bill received the Royal Assent in August, 1947.

CHAPTER VIII

The Structure of British Industry

THE main purpose of this concluding chapter is to illustrate briefly some of the more important recent trends in industrial organization, and to attempt to convey some concrete notion of the present structure of British industry. Our knowledge of the facts in this field leaves much to be desired, and such facts as are available are not easily classified and compressed for summary treatment. But since the present "set-up" of industry is largely the outcome of the action and interaction of factors and forces which we have attempted to analyse in the preceding chapters, it is important that some picture, however inadequate, be presented of the present industrial scene.

I. CAPITALIZATION AND PRODUCTIVITY

One of the most marked features of recent industrial development has been the steady rise in the amount of capital employed per worker. The full extent of this cannot be accurately measured for industry as a whole. Increased capital expenditure per head is generally accompanied by increased mechanization of production, so that an indirect indication of progress in this field is given by the fact that the amount of power used per worker employed increased from 1.5 h.p. in 1907 to 2.41 h.p. in 1930.¹ In a number of industries for which detailed information is available, the size of plants has been steadily enlarged and processes have become increasingly mechanized. Thus, for example, the average size of blast- and steel-furnaces and the percentages of coal mechanically cut and conveyed below ground have steadily risen throughout the inter-war period.

One consequence of the heavier capitalization of industry has been increased productivity per head. Aggregate physical production per operative in Census of Production trades increased by approximately 35 per cent between 1924 and 1937. Between 1924 and 1938 the volume of aggregate production is estimated to have increased by about 31 per cent. These figures bear

¹ Census of Production trades only—excluding electricity supply undertakings.

testimony to the remarkable progress made during the inter-war years in raising physical productivity per man in spite of the general state of depression pervading many of the older industries.¹ When British industry is compared with that of the U.S.A. there can be no doubt that even more spectacular advances are possible in the immediate future, given a further increase in the amount of capital employed per operative.

2. EXPANDING AND CONTRACTING INDUSTRIES

It is interesting to note the extent to which certain industries have been developing during the inter-war years whilst others have been declining, absolutely or relatively. The Table on the next page shows index numbers of the physical volume of production for certain years and industrial groups between 1924 and 1938.²

Only two major industrial groups showed an absolute decline in physical productivity over the period—viz. mining and the leather trades. But if some of these groups are split up, many other trades would need to be added to the list, e.g. pig iron, tinplates, locomotives, rails, galvanized sheets, shipbuilding, cotton, wool, linen, lace, grain milling, and bread and biscuit manufacture. The textile, chemical, and food, drink, and tobacco groups failed to keep pace with the general advance, the former being preserved from an absolute decline only by the remarkable increase in the productivity of the silk and artificial silk trades. The building and india-rubber groups reveal the greatest increases in output. The iron and steel, etc., group shows up to advantage, largely as a result of a very considerable increase in the output of motor cars. Steel and finished steel output increased absolutely over the period, but as noted above there was a sharp fall in the output of other important sections. The general picture is one of decline in the older basic industries (coal-mining, cotton, wool, linen, shipbuilding, and important sections of the iron and steel industry), and of steady expansion in building and new industries such as automobiles, rubber, and artificial silk.

¹ The value of net output per person employed in Census of Production industries increased from £212 in 1924 to £222 in 1935 in spite of a fall in the Wholesale Price Index Number of 36 per cent.

² Abstracted from *London and Cambridge Economic Service Monthly Bulletin*, May 23rd, 1939, page 228 (1924 = 100.)

TABLE I

Year	INDUSTRIES							Combined index
	Agriculture	Mining	Iron and steel, engineering and shipbuilding	Non-ferrous metals	Textile trades	Food, drink, and tobacco	Chemical and allied trades	
1924	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1927	103.1	95.0	124.5	116.7	104.7	100.9	118.0	174.4
1929	112.1	97.0	136.1	120.1	98.8	107.1	109.8	207.9
1932	106.0	79.1	92.1	93.0	87.7	100.1	99.6	164.6
1935	113.7	85.7	165.0	159.0 ¹	103.5	112.0	134.1	115.8
1937	116.0	93.5 ²	202.5	183.1	125.6 ³	119.1	159.3	163.4
1938	116.2	86.0	179.1	162.0	101.2 ³	124.4	121.9	98.7
					113.3	137.9	153.7	126.9
							118.1	261.0
							91.7	274.0
							373.0	268.0
								131.0

¹ New Series.² Provisional.³ Excluding wool

The following Table, showing the number of persons employed in certain industries in 1924 and 1935, further illustrates this trend. The figures have been abstracted from the Census of Production reports.

TABLE 2

Industry	VOLUME OF EMPLOYMENT IN THOUSANDS		Net Expansion (+) or Con- traction (-)
	1924	1935	
Coal-mining	1197.2	762.3	- 434.9
Cotton, wool, linen, hemp and textile finishing	1016.3	758.1	- 258.2
Shipbuilding	141.9	79.5	- 62.4
Motor, cycle and aircraft	204.4	296.4	+ 92.0
Electrical engineering	150.9	240.0	+ 89.1
Food, drink, and tobacco	440.0	505.6	+ 65.6
Paper, printing and station- ery	342.6	400.7	+ 58.1
Clay, building materials, building and contracting	628.0	680.4	+ 52.4
Iron and steel	489.9	533.5	+ 43.6
Silk and artificial silk	39.9	81.7	+ 41.8
Clothing	474.0	515.7	+ 41.7
Public Utility and Govern- ment Departments	741.4	783.4	+ 42.0
Total	5866.5	5637.3	- 229.2

The total number of employed persons covered by the Census of Production was 7,298,202 in 1924 and 7,305,510 in 1935. In terms of employment, therefore, the position in manufacturing and extractive industry was fairly static, the decline of the basic industries being balanced by the expansion of certain new industries, building, and many of the smaller industrial groups. The employed population as a whole increased substantially during the inter-war period, but the increases were confined mainly to non-industrial occupations such as professional, commercial, personal service, and transport occupations.

3. CHANGES IN LOCATION

These changes were accompanied by a substantial movement of industry away from the older centres of activity in South

Wales, Lancashire, and the North East of England toward London, the South East of England and the Midlands. The following Table illustrates the recent locational trend of industry and gives some idea of the relative importance of the various areas in the industrial sphere prior to the 1939-45 war.

TABLE 3

Area	PERCENTAGE OF AGGREGATE NET OUTPUT PRODUCED IN EACH AREA	
	1924	1935
Greater London . . .	17.9	24.5
Lancashire and Cheshire . . .	18.8	15.3
West Riding of Yorkshire . . .	11.2	10.0
Northumberland, Durham and North Riding . . .	5.5	4.2
Warwick, Worcestershire and Staffordshire . . .	10.4	12.1
Rest of England . . .	18.4	20.0
South Wales and Monmouthshire . . .	4.9	3.2
Rest of Wales . . .	0.9	0.7
West Central Scotland . . .	5.1	4.4
Rest of Scotland . . .	5.3	4.3
Northern Ireland . . .	1.6	1.3
Total	100.0	100.0

The figures in Table 3 refer to the net output of Census of Production trades only. Aggregate net output was very much the same in both years, being returned in the 1924 census at £1548 millions and in 1935 at £1625 millions. These figures are quite compatible with the substantial rise in physical productivity, previously noted, in view of the fall in the general price level between 1924 and 1935.

Table 3 does not accurately reflect the movement of population, as distinct from industrial activity, in the country as a whole. Many persons, though unemployed, remained in the depressed areas and so long as they did so a large number of persons (proportionately to the volume of industrial activity) remained in personal service occupations, distribution, and other sphères of economic activity excluded from the Census of Production. The Table on page 151¹ illustrates the

¹ Abstracted from the Barlow Report (Cmd. 6153), pages 22-23. The gainfully occupied population includes unemployed persons normally in gainful employment. The total population of Great Britain was 40.8, 42.8 and 44.8

movement of the gainfully occupied and total population of Great Britain.

4. PUBLIC AND PRIVATE OWNERSHIP

By reference to Table 2 it will be noted that the volume of employment provided by Public Utilities and Government Departments has been increasing. This is in part due to the expansion of industries (e.g. gas and electricity) in which public enterprise has always played an important part and in part to the widening scope of public enterprise as evidenced by the establishment of the B.B.C. and the Central Electricity Board. It has been estimated that public property amounted to 6-8 per cent of the total property of Great Britain in 1911-13 and 8-13 per cent in 1932-34.¹ Total property includes land, buildings, etc., of all kinds as well as purely industrial assets and too much reliance should not be placed upon the figures in view of the inadequacy of the data upon which such estimates are based and the difficulty of distinguishing clearly in all cases between public and private property. But these statistics suggest that the stake of the State and public authorities in British industry is not as great and has not been increasing as rapidly as is often supposed. This, of course, is in terms of ownership. If an estimate could be formed in terms of control the State would undoubtedly be shown to be in a much stronger position. Nevertheless there can be no doubt that private ownership and control remain overwhelmingly predominant. To what extent the present Labour Government will transform this position remains to be seen.

5. ORGANIZATION OF INDUSTRY

Attention has already been called to the fact that "industry" (defined for our present purpose as comprising those activities covered by the Census of Production), though increasing in physical productivity, has tended to remain stationary in terms of aggregate employment whilst the total gainfully

millions respectively in 1911, 1921, and 1931. The gainfully occupied population was 18.4, 19.4, and 21.1 millions respectively in 1911, 1921, and 1931.

¹ *Vide* Campion, *Public and Private Property* (Oxford, 1939), page 92. The figure quoted for 1932-34 includes the capital held by the three largest public corporations, viz. the B.B.C., London Passenger Transport Board, and Central Electricity Board.

TABLE 4

Area	PERCENTAGE OF TOTAL POPULATION IN EACH AREA			PERCENTAGE OF GAINFULLY OCCUPIED POPULATION IN EACH AREA		
	1911	1921	1931	1911	1921	1931
London and Home Counties	23.6	23.5	24.8	23.8	23.8	25.7
Lancashire	11.7	11.6	11.2	12.7	12.6	12.3
West Riding, Northamptonshire and Derbyshire	10.8	10.9	11.0	11.2	11.1	11.2
Staffordshire, Warwickshire, Worcestershire, Leicestershire and Northants	9.2	9.5	9.6	9.4	9.6	10.0
Northumberland and Durham	5.1	5.2	5.0	4.4	4.6	4.4
Mid Scotland	6.1	6.2	5.9	5.9	6.2	5.8
Glamorgan and Monmouthshire	3.7	4.0	3.7	3.4	3.6	3.2
Rest of Great Britain	29.8	29.1	28.8	29.2	28.5	27.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

occupied population has been expanding. Before proceeding to examine the structure of industry in greater detail, some idea may be given of the proportionate importance of industry as a contributor to the National Income. It has been estimated that (including small firms employing under ten persons which did not need to make detailed Census returns) Census of Production trades contributed about 43 per cent of the National Income in 1935.¹ This is only intended to be a rough estimate but is probably sufficiently accurate for our purpose. It is important to bear in mind, therefore, that what follows is not a summary of the structure of British economy in its entirety. Transport, distribution, commerce and finance, and personal services are of equal (if not greater) importance in the aggregate.

The Census of Production covers some 15 trade groups—12 factory trade groups and 3 non-factory trade groups. These trade groups are further divided into 106 factory and 14 non-factory main trades.² For some purposes many of these main trades can be further subdivided. Where necessary these subdivisions will be referred to below as trades. The Table on p. 153 lists the 15 trade groups, the total employment in each group in 1935, and the degree of concentration of each group.³

Some figures have been given in Chapter III to illustrate the pre-war size of firms and we may now expand this information. The most comprehensive data for Great Britain on this subject are to be found in the Census of Production Reports and in the special analysis by Messrs. Leak and Maizels⁴ of certain additional information collected by the Census of Production Office in 1939 relating to the year of the last census (1935). As previously explained, information contained in the Census Reports relates only to establishments (geographically

¹ Compton and Bott, *ibid.*, page 30. Agriculture accounts for approximately 3 per cent.

² For a list of these see Final Report on the Fourth Census of Production (1930), Part V, Appendix I, pages 138–141.

³ This table has been taken from *The Structure of British Industry* by Leak and Maizels, page 16. Government Departments are normally included with Public Utilities but have been omitted from this table. Government Departments employed 102,453 persons in 1935, the total employment returned by the Census being 7.3 millions. Further reference to the degree of concentration will be made below.

⁴ Published in the pamphlet previously referred to. The following few pages consist mainly of a summary of this valuable paper.

compact working units or plants) and to firms (aggregates of establishments trading under the same names). Until the publication of the results of the 1939 inquiry, little information on the structure of British industry was available in terms of common units of control. For purposes of this analysis the firm was defined as above and the unit (or large unit) as a single firm or aggregate of firms owned or controlled by a single company and employing 500 persons or more. The definition of control was narrow, one firm being held to control another only when it owned more than 50 per cent of the capital (or voting power) of the subsidiary. "Single cases" were defined as units comprising one firm only and "connected cases" (i.e. "combines") as units comprising more than one firm.

TABLE 5

Trade Group	Total Employment in 1935 in thousands	Degree of Concentration ¹ (Percentage of aggregate employment in the three largest units)
<i>Factory Trade Groups—</i>		
Chemicals	194·0	48
Miscellaneous	182·6	47
Engineering, shipbuilding, and vehicles	1,104·4	43
Iron and steel	539·3	39
Food, drink, and tobacco	520·7	32
Non-ferrous metals,	122·1	26
Textiles	1,054·9	23
Paper, printing, and stationery	409·0	22
Clay and building materials	249·4	22
Leather	50·5	15
Clothing	539·9	13
Timber	194·9	10
<i>Non-Factory Trade Groups—</i>		
Public utilities	698·1	44
Mines and quarries	845·1	10
Building and contracting	502·3	4
Total	7,203·2	26

¹ The concentration percentages do not in all cases cover the whole of the employment in the group. For all groups taken together 86 per cent of total employment is covered.

The 1935 Census covered 53,217 firms employing 7.3 million persons.¹ Of these firms 2280 employed 500 persons or more and employed an aggregate of approximately 3.8 million persons. There were 1959 units of this size (employing an aggregate of nearly 4 million persons) so that combinations of two or more firms, employing less than 500 persons each, into large units were more than offset by amalgamation of two or more firms employing more than 500 persons each. It is rather surprising nevertheless that these units were not found to employ a greater number of persons. Single cases accounted for 73 per cent of all the units and 54 per cent of the total employment, whereas connected cases were 23 per cent of all units and provided 36 per cent of the total employment.² It will be seen, therefore, that even amongst large units the "combine" is not predominant.

More than half the units were engaged in one trade only (the great majority of these being single cases³) but those engaged in more than one trade, though only 42 per cent of all units, accounted for 60 per cent of the total employment. Of the units engaged in more than one trade single cases were more numerous than connected cases, but the latter (vertical combines) employed a larger number of persons than the former.

Judged by the average number of persons employed, units operating in more than one trade were much larger than units operating in a single trade—connected cases being larger than single cases in respect of each category.⁴ The general tendency was for net output per head to be highest for the larger firms but it would be unwise to deduce very much from this about economies of scale since net output per head depends on many factors other than the size of the undertaking.

It is interesting to note the trades in which large units predominate. Large units account for over 90 per cent of aggregate employment in railways, coal-mines, blast-furnaces,

¹ Excluding 204,151 firms employing not more than ten persons (and employing an aggregate of 826,700 persons) which were exempted from making detailed returns.

² Holding companies accounted for the remainder.

³ That is to say, connected cases engaged in one trade (horizontal combines) were relatively unimportant.

⁴ Judged by net output the average size of units operating in more than one trade was more than double that of single trade units.

and aircraft manufacture and for between 80 per cent and 90 per cent in tobacco, iron and steel (smelting and rolling), and biscuit manufacture. Large units account for less than 25 per cent of total employment in the timber, leather, and building and contracting trade groups.

These figures, however, do not accurately indicate the degree of concentration of employment in the hands of few undertakings. All the units in an industry may be large but the trade may nevertheless be controlled by a large number of firms. A convenient measure of concentration is given by the proportion of aggregate employment in a trade which is provided by the three largest units in it. On this basis the average degree of concentration for all trades taken together was 26 per cent in 1935.¹ In measuring the degree of concentration in this way much will depend upon the narrowness with which a trade is defined. Most firms specialize on a narrow range of products and if a trade is defined so narrowly as to cover only a few commodities it is natural to expect a high degree of concentration. The significance of the degree of concentration can only be properly assessed by reference to the importance and range of the commodities covered.

Degrees of concentration for all the trade groups covered by the Census are shown in Table 5. For particular trades only a few examples can be given. The degree of concentration exceeded 90 per cent for manufactured fuel and wallpaper, was between 80 and 90 per cent for matches, railways, explosives and fireworks, and more than 70 per cent but less than 80 per cent for spirit distilling, wrought iron and steel tubes, and sugar and glucose. At the other extreme the degree of concentration was less than 10 per cent for cotton weaving, wollen and worsted, bread and cake, furniture and upholstery, leather, printing and bookbinding, boots and shoes, china and earthenware, and coal-mining.

These trades usually do not confine themselves to the production of a single commodity and a special analysis was made to ascertain the degree of concentration in respect of the production of particular goods. The degree of concentration exceeded 80 per cent in margarine, matches, condensed milk, refined sugar, motor spirit, cigarettes, slab chocolate,

¹ See Table 5.

electric vacuum cleaners, salt, wireless valves, and sewing cotton.¹

Certain units were among the three largest in more than one trade. There were 63 such units engaged in more than one of the 249 trades covered by the inquiry. Only seven units were among the three largest in more than three trades, viz. Dorman Long & Co. (4), Vickers, Ltd. (4), General Electric Co. (5), United Steel Companies (5), Lever Bros. (7), Imperial Chemical Industries (7), and the Co-operative Wholesale Society, Ltd. (12).

An investigation of the interconnection of trades showed seven as important focal points, viz. coal-mining, non-metalliferous mining, iron and steel (smelting and rolling), mechanical engineering, chemicals, textile finishing, and local authorities. The ramifications of these trades cannot be shown in detail, but the most important were as follows. The trades most closely connected with coal-mining were blast-furnaces, coke and by-products, iron and steel (smelting and rolling), and non-metalliferous mines and quarries in which 84, 84, 51 and 49 per cent respectively of the total employment was provided by units also engaged in coal-mining. Units engaged in the iron and steel (smelting and rolling) industry controlled 65 and 63 per cent respectively of the total employment in blast-furnaces and the tinplate trade. Mechanical engineering is perhaps an even more important focal trade since units engaged in it control 75 and 51 per cent respectively of the total employment in wrought iron and steel tubes and shipbuilding, and significant percentages of the total employment in blast-furnaces, chemicals, iron and steel, carriage and wagon building, and many other trades. The chemical group has important connections with blast-furnaces, coke, metalliferous mining, and iron and steel (smelting and rolling) and the non-metalliferous mining industry with cement, blast-furnaces, metalliferous mines, coke, and chemicals. It should be noted that between each of these main clusters of associated industries there are important cross-connections. The textile finishing and local authorities groupings are more restricted. The most

¹ The lists of trades and commodities contained in this and the preceding paragraph are not exhaustive.

² The figures in parentheses indicate the number of trades in which the company named was one of the three largest units.

important connections of the former are with other branches of the textile industries and of the latter with public utilities. Some large trade groups (e.g. building and contracting) exhibit very little connection with other trades.

The great deficiency of this analysis of industrial structure by Mr. Leak and Mr. Maizels is that it takes no account of links between firms which fall short of ownership or decisive financial control.¹ As we have seen in Chapter V, firms may be associated in a great variety of other ways and in important respects may be subject to common control. These forms of association are so varied as to defy formal statistical analysis, but it is most important that some account be taken of them if a true picture of British industrial structure is to be drawn. We can best conclude this chapter, therefore, with a short account of the main structural features of each of the main trade groups (except the miscellaneous group) listed in Table 5.²

6. THE MAIN INDUSTRIAL GROUPS

The Textile Trades. The most important sections of the textile trades are cotton spinning and doubling (employing 182,415 persons in 1935), cotton weaving (employing 166,904), woollen and worsted (employing 242,209) textile, finishing (employing 100,084), hosiery (employing 115,273), silk and artificial silk (employing 81,825), and linen and hemp (employing 69,152).

The cotton spinning trade is conveniently divided into the coarse (or American) and the fine (or Egyptian) sections. The total capacity of the industry in 1936 was 48.8 million mule equivalent spindles, which were set up in 579 mills.³ Roughly 67 per cent of the total spindlage was in the American section. About 45 per cent of the "American" spindles were controlled by Lancashire Cotton Corporation,⁴ Amalgamated

¹ Also, little or no information is given bearing on the identity and importance of individual firms.

² For the average number of persons employed in each group in 1935 see Table 5.

³ By February, 1946, the total spindlage had fallen to 38.5 millions. Less than 15 per cent of these spindles were owned by firms with fewer than 80,000 spindles.

⁴ At the time of its formation in 1930, Lancashire Cotton Corporation controlled 9.3 million spindles, but many of these have since been scrapped.

Cotton Mills Trust, and four other groups of associated firms. The remainder of the American section is in the hands of small firms operating one or two mills each. The Egyptian section is more highly concentrated, three firms (Fine Cotton Spinners and Doublers, Crosses and Winkworth, and Combined Egyptian Mills) controlling about two-thirds of the entire capacity. But many small firms remain in this section.¹

During the inter-war years many voluntary schemes were formulated with the object of controlling prices and output, but most of them broke down owing to the disloyalty of members and undercutting by outside firms. But as existing schemes collapsed others quickly took their places. In 1938 it was estimated that 55 per cent of the output of cotton yarn was sold under such agreements, many of which owed a great deal to the leadership of Lancashire Cotton Corporation. In 1939 an Enabling Act was passed which permitted any section of the cotton industry to formulate a scheme for fixing minimum prices or eliminating surplus capacity. Subject to the approval of Parliament these schemes could be made binding on all firms.² By an Act of 1936 a Spindles Board was set up to eliminate redundant equipment in the spinning section and by 1939 over six million spindles had been retired from production.

Cotton weaving is carried on by about 1000 firms—probably more if many small firms combining weaving and spinning are included.³ In 1935, 100 undertakings employed over 500 persons and the three largest controlled only four per cent of total employment. Small firms, therefore, dominate this section, which is highly competitive. There are no outstanding firms and although "understandings" are reputed to exist in some specialized sections there appears to be no formal price-fixing association.

The textile finishing trade includes firms engaged in the finishing of all textile products, though the bulk of its work is done on cotton and woollen products. In 1935 it comprised

¹ The manufacture of sewing thread for domestic use (a small and highly organized section of the trade) is virtually monopolized by J. & P. Coats, Ltd., and the English Sewing Cotton Co.

² This Act was suspended on the outbreak of war in 1939, and it was finally repealed by the Industrial Organization and Development Act, 1947.

³ The combination of weaving and spinning in the same firm is unimportant on the whole. In 1946, 18.5 per cent of spinning, and 22.5 per cent of weaving capacity, was owned by firms engaging in both spinning and weaving.

about 850 firms, many of them very small. Each section, however, is dominated by large combines, the bleaching section by the Bleachers Association, the dyeing section by the Bradford Dyers Association and the Wool Dyers Association, and the printing section by the Calico Printers Association. Each section has a cartel association (dominated in each case by the large combines) to which sufficient non-combine firms belong for them to control prices effectively. In 1935 the three largest units controlled about 25 per cent of the whole trade.

Most of the firms in the woollen and worsted industry are very small, more than half employing less than 200 persons. There is little restriction of price competition and very few large firms. The three largest units in 1935 controlled about six per cent of the total trade. Some sections are more highly concentrated than others. For example, the commission wool-combing section (covering about half the total number of combs) is dominated by Woolcombers, Ltd., and by a price-fixing association to which this firm and most of the others belong. The Woolcombers' Mutual Association was founded in 1935 to buy up and scrap surplus capacity. This section though highly organized is subject to a good deal of competition from combers not working on a commission basis. There are some small combines in other sections (e.g. Paton and Baldwins, Ltd., in knitting wool and Illingworth Morris & Co. in worsted spinning), but the general picture is one of small firms and free competition.

The artificial silk industry is a relatively new and thriving section of the textile trades. There are comparatively few firms engaged in it, the 1935 Census returning only 18 establishments engaged in artificial silk manufacture. Courtaulds and British Celanese occupy a commanding position in this section and in 1935 the three largest units controlled 80 per cent of rayon manufacturing. Competition has been restricted in viscose yarns since Courtaulds produce the greater part of the output and the other interested firms are organized in the British Viscose Association, which fixes prices in co-operation with Courtaulds. The latter and British Celanese have competed actively in acetate yarns in the past, but immediately before the war some measure of agreement appears to have been reached between them. The pure silk industry is much

less highly concentrated and is much less important in terms of employment and net output than the artificial silk section. It is not possible to distinguish easily between the two, since many firms are engaged in both silk and rayon weaving.¹

The hosiery trade uses textile products in the production of knitted fabrics of various kinds. There were more than 1000 establishments employing over 10 persons in 1935, the great majority of firms being very small and operating single establishments. Over 50 per cent of net output was produced by establishments employing less than 300 persons and the three largest units were responsible for only 11 per cent of net output and 10 per cent of aggregate employment. The trade is highly competitive and few, if any, cartel agreements or informal price understandings are known to exist.

The linen industry is mainly confined to Northern Ireland. The great majority of firms are small. In the spinning section the seven largest firms (26 per cent of the total number) control about 40 per cent of the spindles and the seven largest weaving firms (14 per cent of the total) control about 36 per cent of the looms. As a general rule each firm confines its activities to one section, but horizontal integration is growing, many of the largest firms being engaged in all sections (spinning, weaving, finishing, and making-up). Some five fully integrated units control about 20 per cent of the spinning and 29 per cent of the weaving end of the trade. The industry is highly competitive and all efforts to promote association for market control have so far failed.²

Iron and Steel. For purposes of the Census of Production this trade group includes the manufacture of pig iron, raw iron and steel, semi-finished rolled products, castings and forgings, tinplates, tubes, sheet-metal, hardware, chains, nails, screws, wire, cutlery, tools, pins, small arms, and many other finished products. For some purposes, however, it is convenient to define the industry more narrowly as including only the primary branches (or heavy end) of the industry and certain

¹ Note should also be taken of the close connection between the cotton and rayon industries. In 1939 about 90 per cent of the rayon staple spun in this country was spun on cotton spindles and 85 per cent of the total looms weaving rayon and rayon mixtures were cotton looms. Some two-thirds of the output of rayon and rayon mixture piece-goods were produced by firms also weaving cotton.

² The figures quoted in this paragraph refer to Northern Ireland only.

1932 tariff protection was granted to the industry and the Import Duties Advisory Committee was given ill-defined supervisory powers over it. Largely as a result of pressure by the Committee the Iron and Steel Federation was set up in 1934. This was a loose federation of sectional price-fixing associations. Some branches of the industry remained outside the Federation (e.g. the Tube and Foundry Pig Iron sections) and some firms did not join the association appropriate to their activities. But the Federation steadily increased its influence and now has a great deal of control over the price policy and trade practices of affiliated associations. The Federation entered into an agreement with the European Steel Cartel in 1935 which covered the allocation of foreign markets and the limitation of imports into this country. In addition various sections of the industry (e.g. the tinplate, ship-plate, and rail-making sections) were parties to other international cartel agreements. By 1939 the main sections of the industry were very highly organized and price competition had been virtually suppressed. By this time the Federation was comparable to a super-cartel covering the greater part of the industry. Through its trading organization (British Iron and Steel Corporation) it centralized purchases from the European cartel countries and acted as a central selling agency for the export of heavy steel. The Federation also exercised considerable influence over new development work and administered a fund raised by levy for subsidizing inefficient plants in peak periods and maintaining them in slack time, for establishing greater equality in delivery charges, and for assisting and expanding the export trade. The steady growth in the power and influence of the Federation placed it in a stronger position to control the sectional associations and to combat the activities of independent firms.

Engineering, Shipbuilding and Vehicles. Separate discussion of this group is not easy since many firms are engaged in various sections of the trade and are also in other groups such as iron and steel. Generally speaking, economies of scale are very important throughout the group and the average size of undertakings tends to be larger than elsewhere.

The mechanical engineering section, which employed about 444,000 persons in 1935, includes the manufacture of prime movers, boilers, textile and agricultural machinery, machine

tools, lifts, cranes, marine engines, sewing machines, etc. It is, in fact, a convenient grouping of a large number of associated trades. More than 138 units engaged in mechanical engineering employed over 1000 persons and accounted for 44 per cent of aggregate employment in the section in 1935. The extent of their outside activities may be gauged from the fact that these units, employed altogether about 815,000 persons. Of these units eight employing over 25,000 persons each were amongst the largest units in British industry. Some of the trades are highly competitive, whilst others are more or less completely monopolized by large firms or through cartel agreements. Textile Machinery Makers, Ltd., Weygood Otis, Ltd. (lifts), United Shoe Machinery Co., Singer Sewing Machine Co., and W. & T. Avery, Ltd. (weighing machines), dominate their various specialized trades. Manufacturers of machine tools co-operate through Associated Machine Tool Makers, Ltd., which confines its members to a limited range of products, and a number of sectional associations control prices. The Locomotive Manufacturers' Association and the Agricultural Engineers Society (agricultural machinery) also attempt to exercise some control over the market in their respective trades.

The electrical engineering section employed approximately 252,000 persons in 1935 and was much more compact and highly organized than mechanical engineering. Some 58 units employed over 1000 persons in 1935 and provided 70 per cent of the total volume of employment. These units were not engaged in other sections or trade groups to any significant extent, though some of the largest concerns are interested in power supply. The most important units were General Electric Co. and Associated Electrical Industries. There are, however, a large number of small firms (mainly engaged in the manufacture of wireless equipment and miscellaneous machinery), but most of them participate in price-fixing associations with which this section is honeycombed. The British Electrical and Allied Manufacturers' Association represents the industry generally but price fixing is mainly the work of sectional associations. The best known are the Cable Makers' Association and the Electrical Lamp Makers' Association, the latter being one of the most highly organized cartels in British industry. The electrical

machinery trade is dominated by the very large firms mentioned above and prices appear to be fixed by agreement between them rather than through formal associations established for the purpose.

The shipbuilding section employed nearly 82,000 persons in 1935. The firms engaged in it are mainly large concerns vertically integrated with iron and steel and engineering. The industry is confined to less than 40 units the three largest of which provided more than a quarter of the total employment in 1935. Until 1930 the industry was highly competitive, but in that year National Shipbuilders Security, Ltd., was formed by firms representing 96 per cent of the total capacity to buy up and eliminate surplus capacity. By 1939 about one-third of the building capacity existing in 1930 had been removed from production. In 1936 the Shipbuilding Conference was reorganized and is since thought to have exercised considerable influence in restricting price competition.

The motor manufacturing section¹ is mainly an assembling industry. Economies of scale are important and it is not surprising to find it dominated by a few large firms or groups of firms, e.g. Nuffield, Rootes, Ford, Austin, and General Motors. In 1928 these units produced 87 per cent of the output of private cars. Prices are fixed by each manufacturer independently and competition is keen but resale prices are strictly controlled by trade associations. Most of the important firms confine their activities to motor manufacturing, though some are interested in mechanical engineering and others have their own steel producing plants. The motor-cycle and bicycle industries are highly competitive and although some large firms with other important industrial connections also manufacture cycles (e.g. Birmingham Small Arms, Ltd.) the majority of firms are small and highly specialized. Unlike the motor trade, firms engaged in the cycle trade manufacture a large proportion of their own components as well as assemble the finished product.

The aircraft manufacturing section was small prior to the rearmament phase of the late thirties and only employed about 35,000 persons in 1935. Some 20 to 30 firms were engaged in it, some manufacturing air-frames only, some specializing in the

¹ 221,000 persons were engaged in motor and cycle manufacture in 1935.

manufacture of aero-engines and only a few engaging in both. The tendency before the war was for the average size of firm to grow and for the degree of concentration to increase. In 1935 47 per cent of the aggregate employment in aircraft manufacture was provided by the three largest units.

The Coal-mining Industry employed 764,175 persons in 1935.¹ Its limits are easier to define than most industries and it is correspondingly easier to present a comprehensive view of its structure. Before the war about 330 small firms were responsible for about one-half per cent of the aggregate employment and 178 firms for approximately 90 per cent. In 1935 the three largest units provided nine per cent of total net output and total employment. The industry is, however, much more highly unified, particularly on the selling side, than these figures suggest. Under Part I of the Coal Mines Act (1930) the production, prices, and sale of coal were regulated by district schemes administered by coal-owners through District Executive Boards. A central Council representative of all coal-owners in Great Britain determined the maximum output of coal for each district and exercised some co-ordinating power over district minimum prices. Each District Executive Board determined maximum outputs for each undertaking and minimum prices for each class of coal. In 1936 district selling schemes were introduced. In some districts (principally Lancashire) all coal was disposed of through a central selling agency which sold as a principal (and not as agent) and in other districts all sales were subject to permits granted by selling committees acting under the authority of the Executive Boards. Prior to 1939 steps had been taken to co-ordinate selling arrangements between the districts, and in many important markets for coal consumers were faced with what amounted to a single seller.

The State has also intervened in the industry to promote amalgamation with a view to increasing efficiency. By an Act of 1926 coal-owners could submit amalgamation schemes to the Board of Trade and powers of compulsion could be exercised against recalcitrant minorities. By Part II of the Act of 1930 the Coal Mines Reorganization Commission was

¹ This industry provides the bulk of the employment shown for the mines and quarries group in Table 5.

given powers to amalgamate colliery undertakings compulsorily but these powers proved ineffective. Some progress was made with voluntary amalgamations but it was insufficient to affect radically the structure of the industry. The powers exercisable by the Reorganization Commission were strengthened and transferred to the Coal Commission by an Act of 1938, but they have remained in abeyance. In 1946 the industry was nationalized, the State acquiring its fixed assets and delegating the management of the unified industry to a National Coal Board appointed by, and responsible to, the Minister of Fuel and Power.

Public Utilities. This group comprises gas, electricity, water, canal, dock and harbour, and railway undertakings.

The railway companies (excluding tramways and light railways) employed 211,000 persons in 1935 of whom 174,000 were employed by seven large units employing more than 500 persons. The only units of outstanding importance, however, are the four main line companies (L.M.S., L.N.E.R., G.W.R., and S.R.) into which the majority of the railway companies were amalgamated by the Railways Act of 1921. Rates are controlled under the Act by the Railway Rates Tribunal and a standard (maximum) revenue is laid down.¹

The gas industry employed 121,000 persons in 1935, the three largest units controlling about 30 per cent of the entire industry. It comprises more than 1000 separate undertakings ranging in size from very small concerns supplying single villages to the Gas, Light and Coke Company which accounts for about 12 per cent of total sales. Some 65 units making over five million therms each per annum, supply about 70 per cent of total sales whilst 762 units making under 1½ million therms supply only 13 per cent of total sales. Local authorities (or Joint Boards) operate 247 undertakings which supply about 27 per cent of total sales. Other statutory companies supply all but two per cent of the remainder. The majority of these companies are independent, but 264 of the smaller concerns are

¹ Surface transport in Great Britain has been nationalized by the Transport Act of 1947, which vests the assets acquired in a Transport Commission. Detailed administration will be delegated to five Executives for railways, docks and canals, road transport, London passenger transport, and hotels. Members of the Commission and Executives will be appointed by the Minister of Transport. The Commission will be subject to direction by the Minister.

under holding company control. All undertakings over a certain size must become statutory and all statutory companies are subject to control in respect of prices and profits, area of supply, quality of product, etc.

The electricity supply industry employed 103,000 persons in 1935. According to the Census of Production (1935) there were 603 establishments operated by companies or local authorities for public supply,¹ including those maintained by transport companies and other authorities for their own supply. The great majority of these establishments are small and nearly 50 per cent of aggregate employment is provided by those employing less than 400 persons. Prior to 1926 there were nearly 500 generating stations in existence since the majority of undertakings generated their own supplies, but some took supplies from power companies for distribution. In 1926 the Central Electricity Board was set up to concentrate the generation of electricity in the most efficient stations and to supply electrical power in bulk for distribution. The Board has completed a "Grid" of high tension transmission cables covering most of the country and linking up about 150 generating stations. The Board controls but does not own these stations; it buys power from them and resells to distributors. Distributing undertakings owning these generating stations sell the power to the Board and buy back from it what it requires for distribution to its consumers. Nearly 80 per cent of the electricity generated is under the control of the Board. The concentration of generation has resulted in considerable economies, but supply and distribution remain in the hands of a large number of concerns, many of them very small.²

Canal, dock and harbour undertakings employed about 10,000 persons in 1935. Some harbours are operated by the railway companies and are excluded from this figure. A substantial proportion of the total employment is provided by Public

¹ Many of these establishments do not generate electricity but take supplies from the Grid (see below). As in the gas industry statutory undertakings have monopoly powers to supply in a given area and are subject to price and profit control.

² The Electricity Act of 1947 provides for the acquisition of the entire assets of the electricity industry by the State. A British Electricity Authority will be responsible for bulk generation and distribution, and 14 Area Boards for retail distribution. The Minister of Fuel and Power will make appointments to the Authority and Boards and will have power of over-riding direction.

Boards such as the Port of London Authority and the Mersey Docks and Harbour Board. Water undertakings employed 32,000 persons in 1935, of which 24,934 were employed by local authorities.

Food, Drink and Tobacco. This group includes a wide assortment of trades, e.g. grain milling, bread and biscuits, cocoa and sugar confectionery, dairy products, sugar and preserved foods, brewing, distilling, wines, aerated waters, and tobacco. They present a varied picture from the point of view of structure, some being highly competitive whilst others are controlled by a few large firms or monopolistic organizations.

Over 60 per cent of the aggregate employment in bread and cake making was provided by about 1500 firms employing less than 100 employees in 1930, and in 1935 there were only 40 units employing over 500 persons, these controlling six per cent of the aggregate employment. Biscuit manufacture is more highly concentrated, about 60 per cent of aggregate employment being provided by eight large firms each employing over 1500 persons. Both the bread and biscuit trades are highly competitive.

Small firms also predominate in the cocoa and sugar confectionery trades, though the average size of firm is large. About one-third of aggregate employment was provided by six large firms in 1930. This comparatively high degree of concentration reflects the predominant position of the large cocoa and chocolate manufacturers, viz. Cadbury, Fry, Rowntree, and Terry.¹ There is believed to be a certain amount of working co-operation between some of these firms, but on the whole the trade was highly competitive. Much the same is true of preserved foods and dairy products, though some large firms have been built up (for example, in the bacon curing and sausage trade) and particular commodities are almost completely monopolized by one or a few large firms.²

Grain milling was formerly a trade in which competition flourished but two leading firms (Rank and Spillers) have

¹ 85 per cent of the output of moulded chocolate in bars and blocks and 93 per cent of the output of cocoa and chocolate powder was produced by the three largest units in 1935. In 1938 the Cadbury firm alone employed 10,000 persons.

² E.g. sweetened condensed milk by Nestlé and margarine by Lever Bros.

expanded until they now occupy a commanding position. Ranks alone accounted for nearly one-third of the total output before the war. These two firms took the lead in organizing the Millers' Mutual Association to which nearly all millers belong. The association restricts production by quota and allocates markets on a regional basis. The seven largest companies have set up an organization called Purchase Finance Co., Ltd., which, with the proceeds of a levy, has been active in buying up and eliminating surplus mills.

Beet sugar factories have been amalgamated by statute into the British Sugar Corporation, but abuse of monopoly power is curbed by the presence of Government nominees on the directorate. Refined sugar production is almost completely monopolized by Tate and Lyle, Ltd. The Distillers Company controls about 80 per cent of the output of potable spirits and the Imperial Tobacco Company and Carreras practically control the tobacco trade. In both the distilling and tobacco trades, however, independent firms remain active on the fringes of the trade, and have exercised a restraining influence over the large combines which might otherwise have been tempted to abuse their monopolistic position.

The remaining trade groups must be more briefly dismissed. The *building and contracting group* is the least highly organized and concentrated of all the major trade groups. The three largest units employed only four per cent of the aggregate employment in 1935 when there were over 8000 firms (employing more than ten persons) engaged in the industry. Of these 7716 employed less than 100 persons and provided over 50 per cent of total employment. The industry is almost wholly organized on the basis of small local firms freely competing with each other.

The *leather and clothing groups* are also mainly competitive. Very few combines or monopolistic associations exist, though there is a price-fixing association for rayon seamless stockings and an association controlling the output of sole leather. The boot and shoe trade which is one of the largest in the clothing group is fairly typical. Firms are numerous and small, entry being comparatively easy and maximum economies of production being reached at an earlier stage than in most sections of manufacturing industry. There were over 800 plants

(manufacturing only) in 1935 of which nearly 500 employed less than 100 persons and only 14 employed over 1000 persons. It has been estimated that about four per cent of all firms control two or more plants and that these firms control about ten per cent of the total number of plants.

The *chemical and allied trades group* on the other hand constitutes one of the most highly concentrated in British industry. It is dominated by Imperial Chemical Industries which has practically a complete monopoly of the production of dyestuffs, explosives, and alkalis. In other sections its monopoly is less complete but for a number of other products (e.g. sulphuric acid, sulphate of ammonia, salt, and benzol) it dominates cartel associations which control prices and output. Lever Bros. occupy an outstanding position in other sections, such as soap and candle manufacture, and seed crushing. Imperial Chemical Industries has a "gentlemen's agreement" with Lever Bros. to keep out of the soap trade and the latter now controls about 75 per cent of the total output. Petroleum refining is mainly in the hands of large international combines, and in 1935, 82 per cent of total employment in this section was provided by the three largest units. The British Match Corporation controls about 80 per cent of the British match output, but independent firms and foreign competitors have restricted its power to dictate prices.

Generally speaking smelting processes in *non-ferrous metals* are concentrated in the hands of a few large firms whilst the working up of the metal into finished goods is carried out by a large number of small firms. The British Aluminium and International Nickel Companies have almost a complete monopoly of British aluminium and nickel production, whilst tin smelting in the United Kingdom is dominated by the London Tin Corporation. Other large corporations occupy a predominant position in the smelting of other non-ferrous metals. The main structural features of the *clay and building materials group* are less easily summarized. It comprises many trades in which conditions are widely different. About 80 per cent of the output of cement is controlled by the linked Associated Portland and Tunnel concerns. Both sell jointly through the Cement Marketing Co. and they dominate a cartel organization (Cement Makers' Federation) which includes nearly all firms in the trade

and controls prices and output. Brick manufacturing is principally carried on by a large number of very small firms, but one large firm (London Brick Co.) produces about 25 per cent of the national output. The latter exercises a great deal of control over prices in the South and South East of England and in other parts of the country there are many regional price-fixing agreements. The china, earthenware and other building material trades include few large units and competition is little restricted except for glass bottles and mirror glass, which are covered by cartel arrangements. Another important exception is the Turner and Newall combine which produces almost the entire output of asbestos.

The *timber and paper, printing and stationery trade groups* are not highly concentrated except in particular sections such as wallpaper the output of which is almost completely monopolized by Wallpaper Manufacturers, Ltd. Paper and newspaper production includes some large firms, but on the whole free competition prevails. The three largest units controlled only 10 per cent and 22 per cent of the aggregate employment in the timber and paper, printing and stationery trades respectively in 1935.

It is perhaps true to say that no very clear impression of the structure of British industry emerges from this short survey, but it should suffice to show the danger of hasty generalization. The picture presented is one of an economy still in the transition stage between loosely organized, competitive, small-scale industry and large firms or groups of firms exercising in many different ways varying degrees of monopolistic power over the market. In some fields public ownership or State control dominates the scene; in others it is non-existent. The detailed pattern of industry is bewildering in its complexity and many of the general statements frequently made on the subject are hardly borne out by the facts.

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More advanced texts are indicated by an asterisk.

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